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TO REPAIR OR NOT TO REPAIR – THAT, IS THE QUESTION

A Multiple-Case Study of Circular Strategy-as-Practice in the Office Furniture and Household Appliance Sectors

Master's Thesis
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Abstract

Circular economy is widely advocated as the 'golden path' to a more environmentally and economically viable economic system, which national economies and economic unions as the EU should pressingly move towards. While business models supporting circular economy are often thought of as focusing on recycling, extending product lifecycles through reuse, a means to *reduce* waste in the first place, is also a potent form and implementation of circular economy strategy. Yet practical case studies of business models enabling product reuse are still limited, and so is examining business strategizing from the lens of circularity.

This study contributes to fill these gaps in analyzing circular strategy enactment in two organizational entities: Martela Oyj, a Finnish office furniture company with a Workplace as a Service model, and Simple, Very Simple ApS, a Danish company selling remanufactured household appliances with the support of private and public sector partner organizations working within an emerging network.

An exploratory multiple-case study research design is used to investigate circular strategy enactment. The strategy-as-practice perspective from the strategic management field, based on the three tenets of strategy *praxis*, *practices*, and *practitioners*, guides the analysis, together with two key circular business model innovation theoretical frameworks. Interviews and secondary empirical evidence are analyzed by means of thematic analysis to decipher *circular strategy-as-practice*; the work activity streams, practices, and individuals shaping it.

This study visualizes the activity streams making up circular strategy enactment at Martela and around Simple, Very Simple, and delves into the everyday work of employees working in different functions within the two companies and partner organizations. Core activities making up circular strategy *praxis* include applying individual judgement and making product decisions based on assessing specific factors, homogenizing product heterogeneity, and simplifying task complexity. The *practices* of dialogue and information-sharing, collaboration, and design for user-centricity, are engaged in and drawn upon by this study's interview participants in support of their situated activities. Finally, four circular strategy *practitioner* roles are identified, each bridging two or more levels of *circular strategy-as-practice*: individual, team, organizational, network, and institutional.

It is found that while circular models of production and consumption for reuse strive to break from take-make-dispose models, operational scale is similarly a prerequisite to reduce production and transportation costs and propose a competitive business model, as in the generic linear economy. Building scale when working with reuse products as inputs requires developing robust supply chains and consumer-user trust in reuse products. Finally, this research's two case studies highlight the need for, and emergence of, new professional roles for the circular economy.

Keywords circular economy, business models, strategy-as-practice

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LIST OF ABBREVIATIONS

BSH – BSH Hausgeräte GmbH
CE – Circular Economy
EEE – Electrical and Electronic Equipment
EPR – Extended Producer Responsibility
PRO – Producer Responsibility Organization
PSS – Product-Service-System
S-as-P – Strategy-as-Practice
SVS – Simple, Very Simple Aps
WAAS – Workplace as a Service
WEEE – Waste Electrical and Electronic Equipment

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1. INTRODUCTION

1.1. The Context: Circular Economy as Vehicle for an EU Sustainability Transition

Since the industrial revolution, national economies' industrial production and consumption systems have been based on 'linear' material and energy flows within a take-make-dispose production paradigm (Esposito et al., 2018; Korhonen et al., 2018). This linear paradigm, however, is not sustainable in exerting considerable pressure on the Earth's resources – overconsuming non-renewable resources and generating waste and carbon dioxide emissions (WBCSD, 2010). The global consumption of materials, including biomass, fossil fuels, metals and minerals, is projected to double in the next forty years (OECD, 2018) and annual waste generation to increase by 70% by 2050 (World Bank, 2018). Moreover, it is estimated that half of total greenhouse gas emissions and more than 90% of biodiversity loss and water stress originate from resource extraction and processing. To mitigate this accelerating environmental degradation, a transition to circular economy in the EU is expected to significantly contribute to climate neutrality goals by 2050, as well as contribute to efforts to decouple economic growth from resource usage. (European Commission, 2020a; Ellen MacArthur Foundation, 2017)

The circular economy offers an alternative industrial and economic organization model which seeks to "maximiz[e] what is already in use along all points of a product's lifecycle, from sourcing to supply chain to consumption to the remaining unusable parts for one function and their conversion back into a new source for another purpose" (Esposito et al. 2018, p. 6). According to the Ellen MacArthur Foundation (2017), a move to a circular economy in Europe could result in 32% primary material consumption along with 50% carbon dioxide emission reductions by 2030. From a job creation perspective, it is further estimated that applying circularity principles across the EU economy has the potential to increase EU GDP by an additional 0.5% by 2030 and contribute 700 000 new jobs (Cambridge Econometrics, Trinomics & ICF, 2018).

A move towards a circular economy indeed is a priority for the EU, as articulated in the *Closing the Loop – An EU Action Plan for the Circular Economy* (2015) action plan. This plan was recently updated to a *New Circular Economy Action Plan For a cleaner and more competitive Europe* (2020), which considers circular economy as a key enabler of the European Green Deal (2019) and connected EU industrial strategy. In this European Green Deal, the circular economy is viewed as a vehicle to a "cleaner and more competitive

Europe", expected to "foster business creation and entrepreneurship among SMEs", and provide citizens with "high-quality, functional and safe products, which are efficient and affordable" (European Commission, 2020a, p.2). The private sector is hence regarded as a catalyzer of the transition towards circular business models, and innovator of more sustainable and scalable, modes of production and consumption.

In Finland, The Finnish Innovation Fund Sitra's *Leading the cycle: Finnish road map to a circular economy 2016-2025* (2016) and "The most interesting companies in the circular economy in Finland" list, present strategies and real-life cases to motivate different-size businesses to innovate their operations towards circularity. Sitra's list has grown substantially in recent years. The first list released in late 2016 included 19 Finnish companies, while in late 2017 the number had grown to 97 companies, along with a distinct category of firms specialized in upholstering and comprising 400 enterprises. In spring 2019, the list was further extended to 124 companies. (Sitra, 2019) There, thus, is growing interest from small, medium and large businesses to start a circular move of their own. Real-life company cases, as those included on Sitra's list, provide useful benchmarks in the context of a transition. They are practical examples of firms experimenting with tweaks to their business models and redesigning how to create, deliver, and capture value according to principles and the mindset of circularity.

1.2. Research Gap and Purpose: Circular Economy from a Strategy-as-Practice Lens

Understanding the various strategies that companies may choose to embark upon as they set out to explore circular economy principles' applications to their businesses, sheds light on what circularity can mean as a new paradigm to business strategizing. This understanding reveals the concrete structural changes, challenges, enablers, everyday realities, and individual experiences and perceptions that make up a firm's internal journey from a linear to more circular operating model, or the early steps of an enterprise 'born circular', that is, founded along circularity principles. Yet, despite the central role of company cases in enabling knowledge development on circular business model implementation, empirical evidence in the form of case studies is rather scant (Evans et al., 2017; Bocken et al., 2016; Esposito et al., 2018; Millar et al., 2019) This real-life case study gap is addressed by this research, which examines the activities, practices, and day-to-day experiences through which circular business model strategies are enacted within two organizational structures.

In this inquiry, the 'strategy-as-praxis' (s-as-p) perspective, interested in how strategy actually is practised by people within an organization and in relation to the outer environment, serves as primary analytical frame. The s-as-p angle specifically recognizes and explores how contextual, institutional factors, shape the micro-activities of individuals, teams and organizations. (Whittington, 2006; Jarzabkowski et al., 2007) From a circular economy viewpoint, examining how individuals and teams' *doings* within organizations are influenced by what is going on in the wider business and institutional ecosystem, is intriguing, as business models for sustainability are often crafted precisely through interactions between individuals and groups inside organizations and within their surrounding networks (Roome & Louche, 2016; Stubbs & Cocklin, 2008; van Kleef & Roome, 2007). Although this study is about circular economy implementation, the substantive of "enactment" more precisely captures the focus of investigation: how circular principles are *acted out*, put into practice, by individuals in their every-day work.

The s-as-p analytical lens has been applied to a number of studies in the strategic management field to understand how strategic outcomes are shaped at sub-organizational, organizational, and industry levels, and by whom and what types of interpersonal interactions. The said perspective, however, has not yet been used in case studies of circular economy strategy enactment. Bridging CE business model, and s-as-p, theoretical constructs, is a key endeavor of the present study, and the three main research questions are:

1. What activity streams make up circular strategy praxis in the two case organizations?
2. What are circular strategy practices; what do circularity practitioners do, and how?
3. Who are circular strategy practitioners?

This study opens with a Literature Review in two parts: I first discuss understandings around the concept of circular economy, its advanced and expected links to sustainable development, and circular business models as vehicles of the transition with reference to two frameworks for circular business model innovation. To complement this literature foundation around the circular economy, I present the strategy-as-practice research agenda, its core themes and concepts, and one prominent framework to guide strategy-as-practice analysis. The Methodology and Methods section follows, after which comes the Analysis structured in three parts: 1) Circular Strategy Praxis; 2) Circular Strategy Practices; and 3) Circular Strategy Practitioners. This paper closes with a Discussion, followed by a concluding chapter summarizing findings and discussing managerial and theoretical implications of the research, as well as areas for further inquiry.

2. LITERATURE REVIEW

2.1. Circular Economy: Core Concepts from an Emergent, Multi-Disciplinary Literature

2.1.1. Defining the Circular Economy

The concept of circular economy (thereafter referred to as 'CE') is widely viewed as a practical, tangible and operationalizable way for businesses to implement 'sustainable development' (Kirchherr et al., 2017; Ghisellini et al., 2016; Murray et al., 2017). While a number of definitions of the concept have been put forth, there currently is no academic consensus on what precisely the CE entails (Millar et al., 2019). Indeed, the CE concept draws roots and perspectives from various research streams and disciplinary fields such as, to name but a few, Industrial Ecology (Lifset & Graedel, 2002), Product-Service Systems (e.g. Mont, 2002; Tukker, 2015), Cradle-to-Cradle (e.g. McDonough & Braungart, 2002), and Natural Capitalism (e.g. Lovins, 1999). Across these streams, scholars have examined and developed strategies for changing material flows so as to improve resource efficiency and value preservation (Nuβholz, 2017). Kirchherr et al. (2017, p.224) propose a definition of the CE based on a meta-analysis of 114 existing definitions. This meta-definition is not intended as a definite one, as the CE is understood as a construct developed through multi-stakeholder discourse (Kirchherr et al., 2017; Berger & Luckmann, 1966; Dahlsrud, 2008):

> *A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations.*

A similar conceptualization, also drawing from a large set of definitions from the CE literature, is proposed by Geissdoerfer et al. (2017, p.766):

> *we define the Circular Economy as a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. Second, we define sustainability as the balanced integration of economic performance, social inclusiveness, and environmental resilience, to the benefit of current and future generations.*

Both definitions regard the CE as an economic arrangement that is regenerative in either minimizing resource inflows (Geissdoerfer et al., 2017), and/or replacing products' end-of-life disposal (Kirchherr et al., 2017) as waste via strategies designed to reuse, recycle, and recover materials for extended – or renewed – use lives. Whereas Kirchherr et al. (2017) view this system as operationalized though business models deployed at various scopes of application, Geissdoerfer et al. (2017) underscore a more comprehensive reduction of environmental resource inputs and outputs, including not only materials, but also waste, emissions, and energy flows. Both definitions nevertheless consider the CE as a pivotal catalyzer of sustainable development including economic viability, social equity, and environmental resilience. These definitions provide bases for this study's discussion of the CE, as together they present the CE as an economic system operationalized via, for example, business models, specifically designed and implemented to limit production and consumption processes' growing burden upon Earth ecosystems and resources.

Yet whilst these two definitions encompass important and core notions of the CE, advanced by scholars from distinct research fields, the extant CE literature still lacks a shared understanding of the CE. Researcher consensus on core concepts underpinning the CE would, however, greatly benefit this research agenda. As Kirchherr at al. (2017) emphasize, consensus around the most frequently used CE definitions would help develop the field, allowing the building of cumulative knowledge on the topic. Indeed, knowledge-building is hampered if "scholar A conceptualizes the 'how-to' of CE as recycling, while scholar B considers the 'how-to' as reducing, reusing, and recycling" (p.228). Finding common ground, the authors remark, does not mean using prominent conceptualizations without questioning, but rather critically engaging with and developing them forward along new cases of empirical evidence. Despite its heterogeneity of definitions and perspectives, the CE literature is still relatively young, as 73% of the definitions studied in Kirchherr et al.'s (2017) meta-review have been proposed in the five years prior to the paper's publication.

At the center of these aggregated definitions lie the 4Rs of 'reduce, reuse, recycle and recover', which also permeate the EU policy framework on CE (European Commission, 2020a), although the 3Rs of 'reduce, reuse and recycle' are most commonly mentioned in 35-40% of current definitions. An important weakness of both the 3Rs and 4Rs is that only a minority of definitions include a waste hierarchy as to which 'R' is to be prioritized in the move towards CE; 'reducing' often neglected vis-à-vis other 'Rs' and recycling highlighted as the primary aim of CE in 6-7% of definitions. (Kirchherr et al., 2017) The authors observe that prioritizing acts of "reducing"

might be unpopular among business practitioner voices due to the commonly implied negative correlation between consumption reduction and economic growth. Yet a hierarchy of waste is important precisely in order to guide steps towards an economic system based on a circular material and energy flow model (Kirchherr et al., 2017; Korhonen et al., 2018). Indeed, some hierarchization can serve to encourage circular business model strategies to not exclusively strive to enhance recycling processes, often viewed as the "low-hanging fruit" or "loop of last resort" (Ellen MacArthur Foundation, 2013) of a transition to CE.

Still, CE definitions also increasingly go beyond the '3Rs' or '4Rs' sequences to a more systems-perspective encompassing changes at micro, meso, and macro levels. A prominent definition in that regard is proposed by the Ellen MacArthur Foundation (2012, p.7), describing the CE as an "industrial system that is restorative or regenerative by intention and design". A more macro perspective views the CE as "requir[ing] complete reform of the whole system of human activity" (Yuan et al., 2006, p.5). However, only about 40% of definitions describe the CE from a systems-angle, with meso-level applications such as eco-industrial parks and regional CE initiatives (e.g. Bansal & McKnight, 2009; Kokoulina et al., 2019) representing a growing focus of CE research since 2012 (Kirchherr et al., 2017). Kirchherr and colleagues' meta-analysis (2017) also indicates that only a handful of studies (e.g. Fang et al., 2007; Linder et al., 2017) depict the CE as requiring large, simultaneous changes at micro, meso and macro levels. This is considered an issue, since for a CE transition to represent real systems-change, spanning multiple scales of application, systems-view consensus among CE definitions is needed to challenge current economic systems, industrial and business models, beyond micro recycling initiatives (Kirchherr et al., 2017)

Micro, including business-level, efforts to incorporate CE principles into business model strategies, are nonetheless important, also for a system transition towards the CE. Indeed, operational changes in one firm can help motivate changes also in partner organizations' activities and inspire new modes of consumption in users; users indeed in a critical role for a CE transition (Selvefors et al., 2019). Grassroots, company-level adoption of CE principles, given the relative ambiguity around the CE definition let alone its practical implementation, is a fascinating and under-studied topic. While CE definitions abound, "examination of pragmatic steps toward implementation often falls short" (Esposito et al., 2018, p.7). How do two organizations operating in separate industries apply CE business model strategies, and how do these activities shape, or are shaped, by those of stakeholders in the surrounding environment? Which activities and practices make up CE strategy enactment, and enacted by whom? These are salient questions addressed in this study.

2.1.2. Circular Economy and Sustainable Development

As sustainable development is advanced as the purpose of the CE across much of extant academic literature (Ghisellini et al., 2016; Kirchherr et al., 2017), it is important to discuss areas in which the link between CE and sustainable development is drawn and supported by empirical evidence. Even though the CE is widely viewed as a practical driver of sustainable development goals, including viable economic growth within environmental limits and intergenerational equity (WCED, 1987; Rockström et al., 2009), the concrete ways in which CE programs fulfill environmental, social and economic sustainability value propositions (Flint, 2013), remain rather under-explored and ambiguous (Millar et al., 2019). While the environmental and economic sustainability claims of the CE are supported by some evidence, from a social dimension, CE principles applied to production systems cannot as of today be established to in themselves drive the social equity dimension of sustainability. From a socioeconomic perspective, the CE's main value proposition is job creation (Geissdoerfer et al., 2017). According to data from Eurostat (2020), between 2012 and 2018 the number of jobs linked to the CE in the EU increased by 5%, reaching around 4 million.

A prominent economic and environmental sustainability case for the CE is that products, parts and materials' reuse, recycling and recovery are expected to reduce the need for new virgin raw materials and energy inputs for new products and parts manufacturing (Webster, 2015; Stahel, 2016). This assumption also underlies public policymaker and business practitioner interests in circular economy as a lever of economic growth aligned with sustainable development and climate neutrality agendas. From an economic standpoint, rethinking a company's business model and product value chain with circularity in mind creates opportunities for developing customer relationships (Ellen MacArthur Foundation, 2017). The CE transition can also yield cost reductions, when a shift from linear to circular, resource loops, lessens economic dependence on resource extraction and waste management, and the "environmental impairment caused by these industrial sectors." (Stahel, 2014, p.3) It is estimated that a business model developed around circularity principles can lead to a 50% gross profit increase and 90% material use reduction for a firm (Lacy & Rutqvist, 2015).

From an environmental resilience lens, the instauration of closed loop systems of production is expected to reduce reliance on raw materials and energy, hence lighten pressures on the natural system (Korhonen et al., 2018). Reintegrating recovered secondary products, parts, and materials, or waste materials (Miller & Halme, 2018) into the value chain, indeed can reduce – or better yet, substitute – resource-intensive primary production

(Zink & Geyer, 2017). Reusing a product or parts can also yield substantial resource efficiency gains, although that depends on the arrangements required to return a product to a suitable state or location, along with use-phase impacts in a second life (Cooper & Gutowski, 2017). The resource efficiency gains of preparing a product for a second use-life depend on the resources, materials, energy and CO2 emissions related to a product's and its materials' lifecycle, from production to disposal (Ashby, 2013).

Yet notwithstanding potential productivity gains, with consumption growing rather than decreasing worldwide, "the circle cannot remain closed." (Allwood, 2014, p.466) Korhonen et al. (2018, p.40) further remark that amidst the growing physical scale of the global economic system, even so-called "closed loop" processes implemented as part of the CE will eventually generate "unsustainable levels of resource depletion, pollution and waste generation". Furthermore, given the role of market forces in dictating production, it is argued as unlikely that market mechanisms would allow for secondary production, reusing products, parts and materials as inputs, to replace primary production (McMillan et al., 2012). Korhonen et al. (2018, p.45) also observe that even with increased secondary production efficiency, it is unclear how that would reduce consumption – without significant changes to current consumption patterns nor the scale of new production, the CE "will remain a technical tool that does not change the course of the current unsustainable economic paradigm". Thus, according to the latter views, in order to support economic growth that simultaneously limits various forms of environmental degradation, a CE transition would need to prioritize the two "Rs" of 'reduce' and 'reuse'.

The principal criticism of 'closed loops' is the fact that they are impossible to achieve both theoretically and practically, for the second law of thermodynamics holds that recycling processes will perpetually require energy and create both waste and side-products as a result of entropy. (Georgescu-Roegen, 1971; van Schalkwyk et al., 2018) In addition, the 'rebound effect', where a measure designed to reduce environmental impacts leads to a behavioural response that in fact yields an even larger environmental impact, is also highlighted as a weakness of achieved resource and energy-efficiency gains (Hertwich, 2005). Millar et al. (2019) stress that so far there is insufficient evidence as to the CE's ability to reduce raw material extraction in the long-term – environmental degradation might at best be slowed.

Despite these most prominent criticisms and the need for more evidence as to the CE's environmental, economic and social sustainability impacts, even if CE processes merely contribute to *slow* resource loops, they might still pave the path to more sustainable resource usage. Insufficient evidence as to the long-term environmental benefits of processes

aimed at closing or slowing material and energy loops should not dismiss the value of novel approaches to resource flows. Rather, it is important to critically evaluate new processes and consider the sustainable development vision one is aspiring at using business model strategies; what change one *might be able to* enact using circularity principles. The CE can be a potent vision in organizations' work towards sustainable development, yet its core tenets and sustainability impacts are shaped through practice. While this study does not advocate the CE as the ultimate path to sustainable development, it is important to highlight the promoted benefits and current shortcomings of the CE's sustainability case. This research sheds light on the concrete activities of two organizational entities actively engaged in the implementation of circular business model strategies. These strategies, in turn, pursue particular environmental and economic sustainability goals – the *forms and authors* of strategy execution motivated by CE principles are foci of this inquiry.

2.1.3. Circular Business Models

2.1.3.1. Business Model Innovation towards Circularity

A business model encompasses the logic of how an organization creates, delivers, and captures value (Osterwalder & Pigneur, 2010) – the organizational and financial architecture within which a business turns resources and capabilities into economic value (Teece, 2010). As such, business model innovation denotes a novel way of creating, delivering, and capturing value, and is achieved through changing one or more elements of a company's business model: its value proposition and customer segments (value proposition), channels and customer relationships (value creation), key resources, activities and partners (value delivery), revenue streams or cost structure (value capture) (Osterwalder & Pigneur, 2010). Business model innovations are deemed necessary to tackle current global challenges and move towards circular material and energy flows at company, industry, and national economy, scales (Boons et al., 2013; Stahel, 2014; Lovins, 1999). The private sector, through company business models, is since 2012 vocally positioned as leader of the transition to CE in the literature around the concept (Kirchherr et al., 2017).

Circular business models represent a distinct category of sustainable business models. Ludeke-Freund (2010, p.23) describe a sustainable business model as one that creates competitive advantage through delivering superior customer value and contributing to the sustainable development of the company and society. Sustainability is conceptualized as economic, social and environmental value, flowing among multiple stakeholders,

including the natural environment and society (Evans et al., 2017). The premise, thus, is of value creation beyond its economic dimension, yet economic viability being an essential foundation to social and environmental wealth creation to benefit a range of stakeholders (Bocken et al., 2013; Stubbs & Cocklin, 2008). A sustainable business model internalizes social and environmental costs associated with a product's provision (Tukker & Tischner, 2006). An organization adopting a sustainable business model develops internal and cultural capabilities to accomplish enterprise-level sustainability and collaborates with key stakeholders to advance sustainability within its surrounding system (Stubbs & Cocklin, 2008).

What, then, makes a business model specifically *circular*? The concept of circular business model blends perspectives from the business model innovation and resource efficiency fields (Nuβholz, 2017). At a general level, circular business model strategies (thereafter also referred to as 'circular strategies') can be understood as activities designed to extend the useful life of resources. This broad conceptualization makes circular strategies subject to various typologies and terminologies by scholars. (ibid.) However, in essence, circular business model strategies create *cycles* for products, parts or materials, to enable their second life such as through repair or remanufacturing, and/or material recycling, this latter activity marking the irreversible end-of-life (ibid.). According to Mentink (2014), a circular business model encompasses the rationale along which an organization creates, delivers and captures value with and within *closed material loops*. Nuβholz's (2017) definition further expands on the ends of a circular business model:

> *A circular business model is how a company creates, captures, and delivers value with the value creation logic designed to improve resource efficiency through contributing to extending useful life of products and parts (e.g., through long-life design, repair and remanufacturing) and closing material loops.*

Extending products and parts' useful life, and closing material loops, appear as the main prerogatives of a circular business model. Nuβholz (2017) observes that this notion of 'closing material loops' is conceived differently in the literature, as some authors equate it to material recycling (e.g. Bocken et al., 2017), while others view it as enabling a second life for products and parts for reuse by a new user (e.g. Willskytt et al., 2016), or rechannelling recovered products, parts and materials – *secondary production* – to the value chain as substitutes to primary material input (e.g. Zink, 2017; Wells & Seitz, 2005). Yet at the core of these somewhat divergent conceptions lies the idea of reconfiguring resource cycles – *flows* of products, parts and materials (Nuβholz, 2017).

Innovating a business model towards circular flows can thus be advanced by means of redesigning a business model's 1) content, as by adding new activities; 2) structure, as via novel activity linkages; or 3) governance, through altering responsibilities over given activities (Zott & Amit, 2010). Such business model redesigns for circular resource flows, aim at novel forms of value creation, delivery and capture that include selecting the right key activities and partners, leveraging key resources and channels, and identifying the right customer segments and customer relationship vehicles (Lewandowski, 2016). These reconfigurations also fashion a particular cost structure yet simultaneously aim to capitalize on additional revenue streams that stem from secondary production – recovering, repairing, redistributing, and reselling post-consumer products (Bakker et al., 2014) – or partnerships with stakeholders in the secondary production market (Nuβholz, 2017). Creating more than one use-life for products, parts and materials is a complex endeavour, which requires a supportive supply chain system and strong partnerships (Velte & Steinhilper, 2016). Indeed, activities to close resource loops need not be accomplished by only one company's business model (Mentink, 2014).

2.1.3.2. From Products, to Product-Service-Systems (PSS) and Networks

Circular business model innovation entails rethinking how to maximize the value of products and materials so as to reduce the use of new raw materials, and through innovative new product and material flows, make a positive environmental and social impact (Kraaijenhagen et al., 2016). Antikainen and Valkokari (2016) emphasize that circular business model innovation is challenging, and even more so within a changing business ecosystem. Indeed, the transition to CE is shaped by various factors at different institutional levels, including societal, regulatory, services and infrastructure, and product and technology changes (Scheepens et al., 2015). To navigate these factors in flux, an effective business model reconfiguration can shift its value chain focus from enabling product ownership, to offering product or service *access and performance* to a customer. Pivoting to service-oriented business models has been undertaken by companies in the sharing economy; a vast opportunity-window for companies interested in the CE. (Antikainen & Valkokari, 2016)

A first step to this service orientation is for companies to "perceive their customers as users rather than buyers" (Antikainen & Valkokari, 2016, p.6). Webster (2015) even posits that environmental and economic frailty in the global landscape calls for the end of the age of the 'consumer' as a depleting entity, and the dawn of the age of the 'user' as a pillar for

restorative systems. Circular business models typically differ from generic business models precisely in that profit is designed to derive not from selling *artefacts*, but from the *flow* of products and materials over time (Bakker et al., 2019). These products, parts, and material flows often are embedded in both forward and reverse chains – in a reverse chain, resources are recovered so that they can re-enter the forward chain (Wells & Seitz, 2015). Product-Service Systems (PSS) have been advanced as illustrative forms of sustainable business models and circular strategies to actualize the consumption paradigm shift from product ownership, to access to services (Nuβholz, 2017; Tukker, 2015; Manzini & Vezzoli, 2002).

A PSS is defined by Mont (2002, p.239) as "a system of products, services, networks or actors and supporting infrastructure that is developed to be: competitive, satisfy customers and be more environmentally sound than traditional business models." A PSS is designed as a combination of tangible products and intangible services, jointly capable of fulfilling a customer need (Tukker, 2015) – "delivering an effective mix of design outputs for society", combined with policies and political processes to facilitate a transition to more sustainable modes of consumption (Dewberry et al., 2015, p.409). With regards to services, Heiskanen and Jalas (2003, p.187) define them as "economic activities that replace the customer's own labour with activities conducted by the service provider, either personally, automatically or in advance through planning and design."

Designing a PSS into the core of a business model as part of a circular strategy can bring important benefits from a sustainability lens. From an environmental angle, a move to services can reduce energy and material consumption (Heiskanen et al., 2001), for when product ownership rests on the PSS-provider company, the latter has an incentive to produce a durable and eco-efficient product (Halme et al., 2004). The shift from product-orientation to service orientation can also support circular economy goals by encouraging product lifetime extension through repair and remanufacturing (Tukker & Tischner, 2006). Moreover, a service orientation can open new strategic opportunities and help build stronger customer relationships (Wise & Baumgartner, 1999; Mont, 2002), along with crafting a competitive advantage as services are more difficult to emulate than products (Simon, 1993). Dewberry et al. (2015) note that designing effective PSS solutions that introduce new types of lifestyle expectations and behaviour changes necessitates thorough attention to local context as well as the use of participatory methods to design a truly user-centric PSS. The PSS design process may thus enhance social sustainability aspects such as the promotion of human interaction and social ties such as between neighbours (ibid.).

Although a potentially very effective vehicle to operationalize a circular business model given the right design, supply chain, and internal organizational arrangements, a move to services in itself, however, is not sufficient to place society on a sustainable pathway (Tukker & Tischner, 2006). From an organizational perspective, a move from products to services is a complex endeavour that implies investing time and human resources into important structural changes. The latter include building employee capabilities to enable a firm's transition from product manufacturer to service provider, as when services become a core part of a company's offer to customers, it calls for a new service innovation process and service-cantered sales competencies. (Gebauer & Friedli, 2005) Logistically, implementing a PSS can be complex in necessitating the contribution of not only the service provider, but a network of socioeconomic actors (Ceschin & Gaziulusoy, 2016).

Antikainen and Valkokari (2016, p.7) remark that "circular business models are by nature networked: they require collaboration, communication, and coordination within complex networks of interdependent but independent actors/stakeholders." A 'network' refers to a group of three or more organizations, either self-initiated or contracted, interlinked in ways that facilitate the achievement of not only their individual goals, but also a common goal (Borgatti & Foster, 2003; Provan & Kenis, 2008; Evans et al., 2017). A 'value network' as one that may characterize a PSS model's implementation, comprises a set of roles and interactions through which organizations engage in both tangible and intangible value exchanges to achieve social or economic good (Allee, 2008). For integrated and balanced systems, interaction, partnerships, and learning from multiple and diverse stakeholders, are key (Winn & Kirchgeorg, 2005), as is the role of a suitable form of network governance in a context where network stakeholders share an overarching goal (Provan & Kenis, 2008).

As mentioned, closing the loop, whether for enabling a second life for products and materials, and/or their ultimate recycling, need not be realized by one sole executing entity, but can be fulfilled through a network of various contributing actors and business models (Mentink, 2014). According to Wells and Seitz's (2005) four archetypical closed-loop value chains, only the 'internal loop' (material reuse within the point of manufacture) is realizable at a company level. The 'post-business loop' (material exchange between distinct companies) requires at least two firms to align their business models, while 'post-consumer' (return from consumers back to the manufacturer via a company-based collection scheme) and 'post-society' (return from consumers via an independent network to a different point of manufacture) loops are coordinated by separate companies and logistical networks. A firm's circular business model may act as one building block within a larger value chain,

which contributing actors work towards circular strategy (Nuβholz, 2017). The creation of new partnerships is essential for circular business model innovation, and symbiotic relationships can also be formed with existing members of a value chain, as for example with customers in roles of raw material suppliers or innovation partners (Miller & Halme, 2018).

2.1.3.3. Two Frameworks for Circular Business Model Innovation

With the preceding overview of the CE and circular business model tenets, applications and enablers, it is now interesting to look at two specific frameworks that help guide and understand circular business innovation. These frameworks serve as references in the subsequent Analysis chapter of this inquiry. Antikainen & Valkokari's framework (2016) for sustainable circular business model innovation (Figure 1) includes three levels of analysis: the business ecosystem level comprising stakeholders and business environment trends, the business unit characterized by Osterwalder & Pigneur's (2010) business model canvas components, and a sustainability impact level including sustainability costs and benefits of the circular business model. The business ecosystem level comprises institutional, regulatory and policymaking factors at municipal, regional, national, and supranational levels (Scheepens et al., 2016; Ellen MacArthur Foundation, 2014).

Based on this framework, circular business model innovation entails iteration and evaluation across the three levels. It also demands considering how a change in one part of the business model may affect both the broader business ecosystem, and 'bottom line' sustainability benefits or costs, in addition to economic costs and revenues. (Antikainen & Valkokari, 2016) Indeed, rethinking a company's activities and value proposition and their realization from a circular perspective, is a holistic endeavor supported by systems thinking and making sense of the interconnectedness of diverse functions and processes part of a business model and executing organizational structure. Antikainen & Valkokari's framework (2016) visualizes the broader contexts within which a circular business model is designed, iterated and adapted, by according importance to both wider ecosystem influences and stakeholder networks, and the sustainability impacts this business model generates.

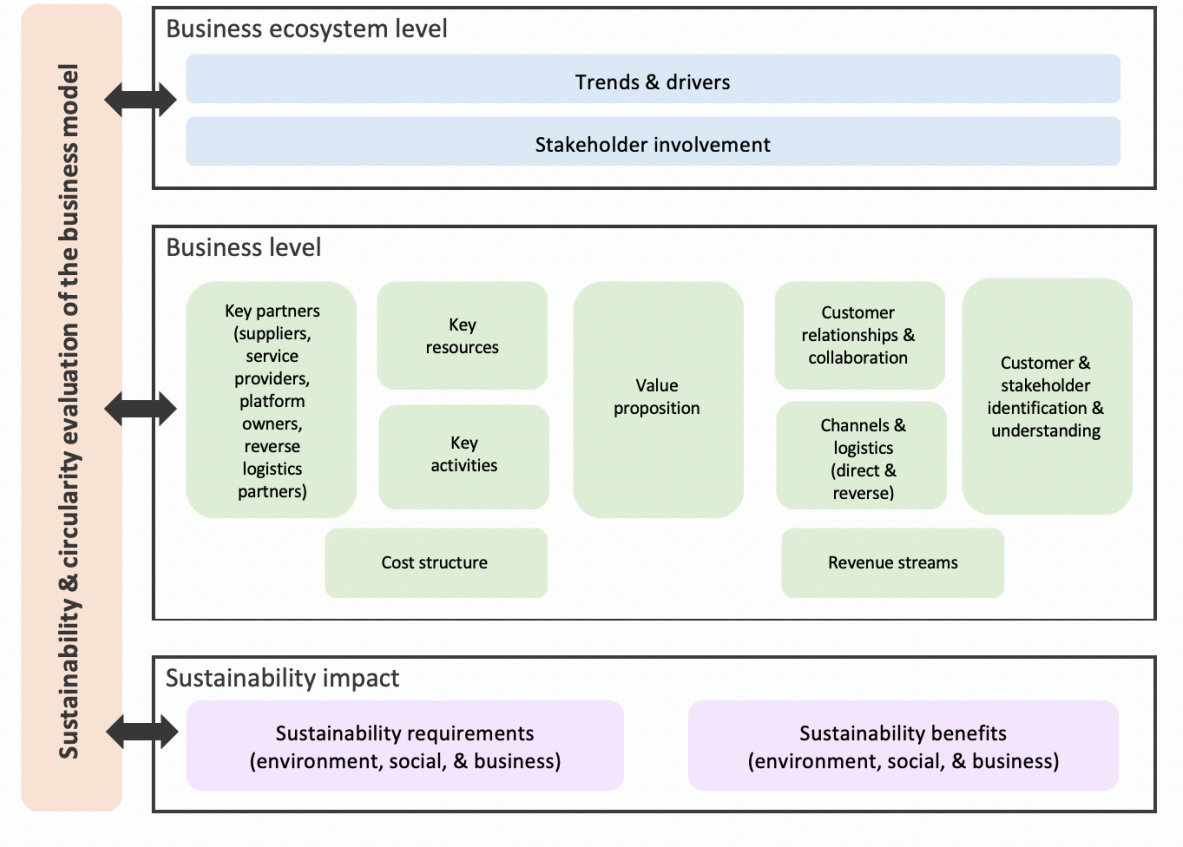

Figure 1. Framework for sustainable circular business model innovation (Antikainen & Valkokari, 2016).

Bocken et al.'s (2016) typology (Figure 2) of circular product design and business model strategies offers an insightful complement to the above triple-level framework. Bocken and colleagues' circular product design and business model strategies can be seen to focus on the business model part, middle level in Antikainen & Valkokari's (2016) framework. The authors identify two key design approaches for cycling resources: *slowing resource loops*, extending and intensifying products' use time through long-life design, repair and remanufacturing, and *closing resource loops*, whereby materials, following their useful lives, are recycled and rechanneled back into production. Design strategies for *slowing* resource loops aim at extending products' use-life so as to reduce dependence on virgin raw materials, hence slowing the resource flows needed to manufacture brand new products. This goal of *slowing* can be accomplished by either designing long-life products or designing *for* product-life extension. (ibid.) Designing long-life products means embedding emotional attachment (Chapman, 2005), reliability and physical durability (Moss, 1985) into product designs. Designing *for* product-life extension, in turn, entails

developing products adaptive to maintenance, repair, upgradability, and dis- and reassembly; each of these interventions prolonging an item's lifetime (Linton & Jayaraman, 2005).

Design strategies for *closing* resource loops seek to bridge the gap between end-of-use and recycling. Strategies for that purpose include designing products for, once at the end of their lifecycle, disassembly and composing materials' safe recycling into new materials, parts or products, or decomposition back into the natural system for biological materials. (Bocken et al., 2016) Antikainen & Valkokari's (2016) and Bocken et al.'s (2016) frameworks offer analytical and semantic lenses for examining the particular resource, activity, and information unfolding in this research's case studies. Yet the enactment, in practice, of the strategies formulated in both frameworks, deserves particular attention. To explore circular strategy enactment, the strategy-as-practice perspective represents a valuable complementary analytical perspective to Antikainen & Valkokari's (2016) and Bocken et al.'s (2016) circular business model innovation frameworks.

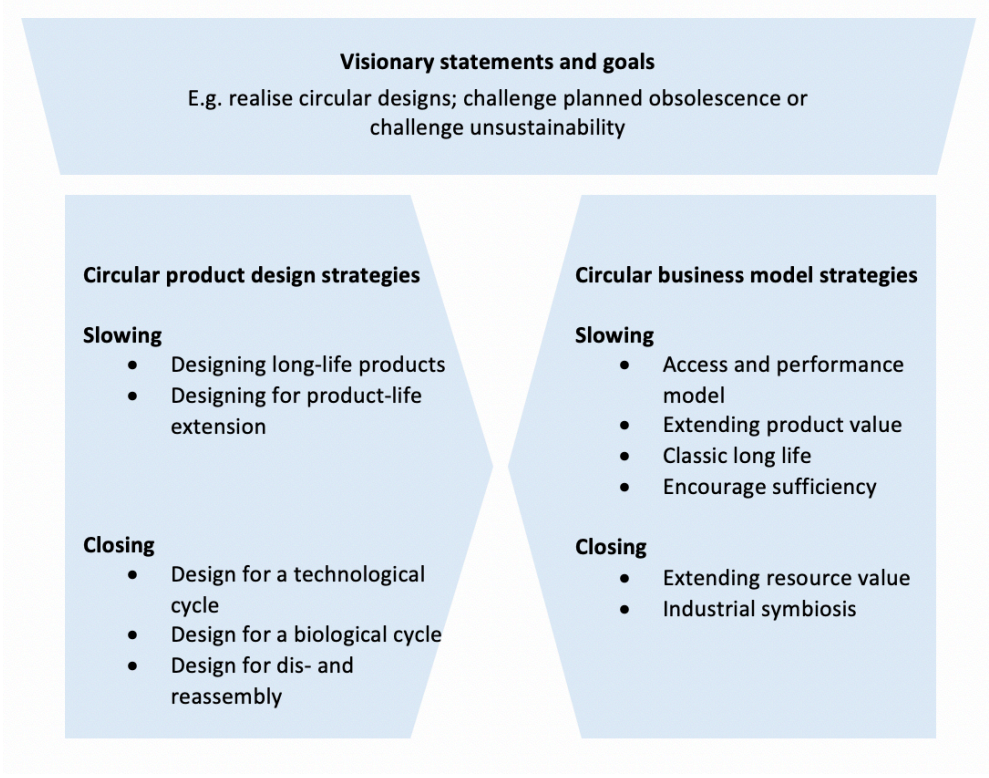

Figure 2. Circular economy product and business model strategy framework (Bocken et al., 2016).

2.2. Strategy-as-Practice: Strategy Praxis, Practices, and Practitioners

2.2.1. The Strategy-as-Practice Perspective

What is *strategy*? Definitions of the term abound in the strategic management literature. Strategy theorist, Mintzberg (1987, p.11), proposes the 'Five Ps for Strategy' view of strategy as a "plan, ploy, pattern, position, and perspective". Strategy as a plan denotes a "consciously intended course of action" to deal with a situation, and may at times resemble a ploy, "a specific 'maneuver' intended to outwit an opponent or competitor". Strategy as a pattern considers the actual *realization* or "resulting behavior" of strategy, whether deliberate or emergent, surfacing in the absence of or despite, intentions. (ibid., p.11-12) Hence as a pattern, strategy encompasses a "stream of actions" (Drucker, 1974, p.104), a certain consistency in behavior, whether or not intended by human design (Mintzberg, 1987). Strategy as a position places an organization within a competitive environment, whereby strategy becomes a "mediating" force between an organization's internal and external contexts. Finally, as a perspective, strategy refers to "an ingrained way of perceiving the world" found inside the organization. (ibid., p.15-16) According to this fifth 'P', strategy is akin to a worldview assumed to be shared among organizational members (p.17). These 'Five Ps' are described by Mintzberg (1987) as complementary, each contributing a distinct aspect to a multifaceted understanding of strategy.

Circular strategy may be understood in terms of the 'Five Ps' as a *plan*, a position in relation to or in challenge vis-à-vis prevailing linear production and consumption models. As a *ploy*, circular strategy may seek to disrupt the linear industry *status quo* through activities and behaviors that form a specific *pattern* of circular resource flows. As a *perspective*, circular strategy denotes an alternative view of organizing production and consumption. That circular strategy as a perspective would be shared amongst all or most organizational members, is, however, rather unlikely, as with other types of strategies given the diversity of meanings and interpretations attached to the CE concept. According to Bourdieu (1990), strategy practitioners, here understood as comprising a wide range of organizational members, routinely face multiple demands, fleeting impressions, unarticulated possibilities, and incomplete understandings.

The 'Five Ps' are a sound starting point in capturing notions at the core of 'strategy' and the term's interpretation in the context of circular business model strategy. As this research forays into how circular strategy is shaped through practice, a few terminological choices are made here. In exploring circular strategy implementation, the nouns 'enactment',

'realization', 'implementation' and 'actualization', are all employed albeit each bearing particular semantic nuances. The notion of *enactment* is privileged, for it denotes 'acting'; "the act of putting something into action" (Cambridge Dictionary, 2020). Implementation and realization may imply the execution of a plan devised by a firm's management – a top-down process implying a stark role division between strategy formulation, and execution (e.g. Hambrick & Mason, 1984; Papadakis et al., 1998; Wiersema & Bantel, 1992).

The strategy-as-practice lens is specifically interested in strategy *enactment*. A 'practice turn' in strategy research emerged in the 1980s (e.g. Bourdieu, 1990; Schatzki et al., 2001), leading to a distinct research agenda called 'strategy-as-practice' (thereafter referred to as 's-as-p') to develop since the early 2000s (e.g. Whittington, 2003; Jarzabkowski, 2005; Jarzabkowski et al., 2007; Johnson et al., 2003). The s-as-p perspective has roots in strategy process scholarship, interested in the unfolding and development of strategy in organizational decisions and action (Pettigrew, 1992). A s-as-p angle regards strategy as lived and embodied experience (Samra-Fredericks, 2003); strategy understood as the practical "way finding" amidst organizational everyday life (Chia & Holt, 2006), thus an inherently dynamic process. Strategy as practice is essentially about *doing* – Weick (1979) argued for the use of verbs over gerunds in organizational research so as to conceive of organizations as processes, rather than states. Whittington (2003) further highlights that the 'practice turn' in strategy places greater emphasis on people than organizations, routine as opposed to change, and situated, micro, activity, rather than abstract processes. The s-as-p research lens attempts to bring "human actors and their actions and interactions to the center stage of strategy research" (Jarzabkowski & Spee, 2009, p.1), placing "*relationality*, action, interaction and habituation at the centre of social analysis." (Chia & Holt, 2006, p.640)

Alongside a process-based angle, an activity-based view put forth by Johnson et al. (2003) looks at the multitude of micro-actions that individuals practice and that influence strategic outcomes. From an activity-based lens, strategy is not something that an organization *has*, but something that its members *do*. Yet at the same time, micro-actions are always embedded within a broader sociomaterial infrastructure and context including tools, technologies and discourses. This institutional context, in turn, influences micro-contexts. (Seidl, 2007; Wilson & Jarzabkowski, 2004) Drawing from the strategy process and activity-based views, the s-as-p perspective examines the inter-relationship between micro-activity and macro phenomena: "the situated doings of the individual human beings (micro)" with the "different socially defined practices (macro) that the individuals are drawing upon in these doings". (Jarzabkowski et al, 2007, p.7; Jarzabkowski, 2004; Whittington, 2006). This

dialogue between micro actions, meso organizational or sub-organizational contexts, and the macro institutional environment, is a central point of analysis within the s-as-p research field as well as in this study in relation to *circular* strategy-as-practice. Defining strategy practice and shedding light onto core tenets of the s-as-p research agenda, is next in order.

2.2.2. Strategy Praxis, Practices, and Practitioners

Strategy, from a s-as-p viewpoint, is defined by Jarzabkowski et al. (2007, p.7-8) as:

> *a situated, socially accomplished activity, while strategizing comprises those actions, interactions and negotiations of multiple actors and the situated practices that they draw upon in accomplishing that activity.*

Whittington (2006) highlights three key themes underpinning strategy-as-practice theory. The first is the role of society – the systems shaping "shared understandings, cultural rules, languages and procedures" (Giddens, 1984, p.614), simultaneously influencing individual actions, thinking and behavior. A second theme relates to the particular manners in which activities are enacted in practice – not merely *what* activities are accomplished, but *how*. This closely ties to the third key theme: the human actors of practice theory "on whose skills and initiative activity depends." (ibid., p.615) These themes in turn ground three core concepts of s-as-p: strategy *praxis*, *practices*, and *practitioners* (Whittington, 2006). S*trategy praxis* refers to all intra-organizational doings that contribute to formulating and executing strategy. This overall *praxis* is embedded within a set of *practices*, both tacit and explicit, comprising various organizational procedures guiding action at different levels, for example internal operating procedures and sector-specific practices. (Whittington, 2006). At a societal level, strategy practices may include types of discourse that inform and legitimate specific ways of doing strategy (Barry & Elmes, 1997) *Strategy practitioners* are all the individuals engaged in "the work of making, shaping and executing strategy" (Whittington, 2006, p.619), the very 'doing of strategy' (Jarzabkowski et al., 2007, p.8).

The s-as-p perspective boasts an extensive literature around the three 'research parameters' of *praxis*, *practices*, and *practitioners* (Jarzabkowski, 2005; et al., 2007; Johnson et al., 2007; Whittington, 2006), including diverse empirical scopes of analysis and definitions of the said parameters (Jarzabkowski & Spee, 2009). It thus should be elaborated how these concepts are understood in this study and specifically in relation to circular strategy enactment. Jarzabkowski's et al. (2007) expand on Whittington's (2006) conceptualizations of *strategy praxis, practices, and practitioners* to propose a visual

framework laying out questions at the root of the s-asp research program: *What is strategy? Who is a strategist? What do strategists do?* In this framework (Figure 3), *strategizing* is regarded to take place at the intersection of *praxis*, *practices*, and *practitioners*.

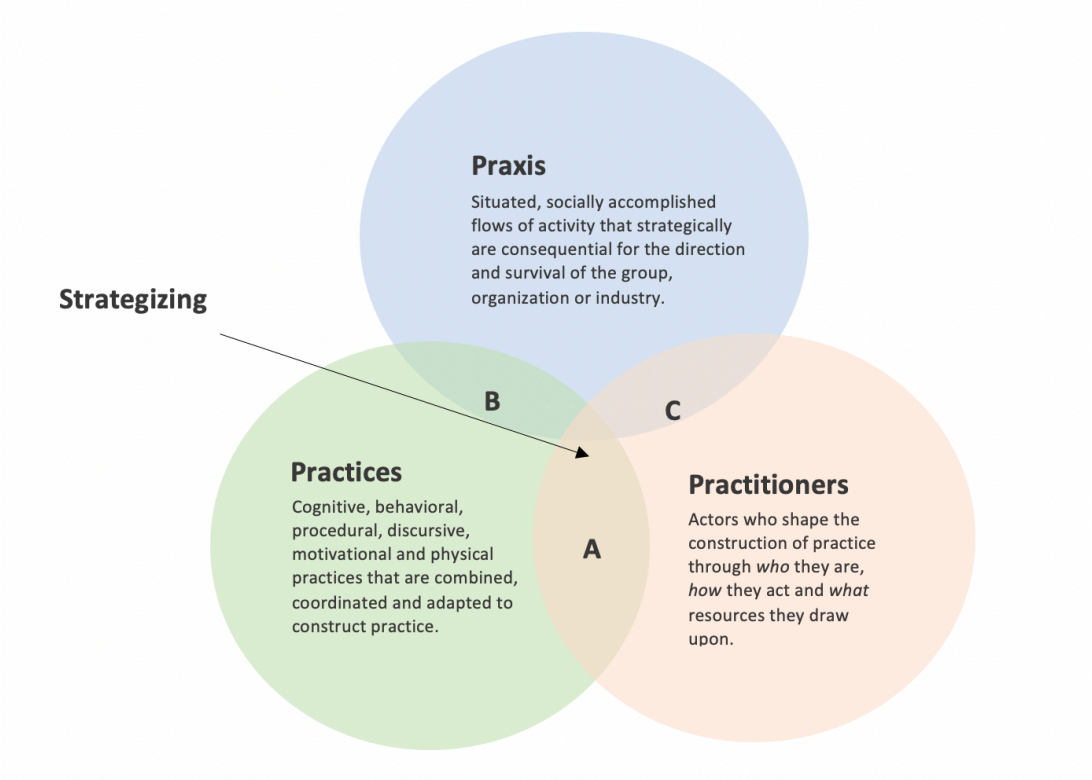

Figure 3. A conceptual framework for strategy-as-practice (Jarzabkowski et al., 2007).

In Figure 3, A, B, and C represent three areas of concept overlap, each representing a distinct focus to links between micro-phenomena and more macro strategic implications. Research focused on area A might, for instance, be interested in how certain industry-wide practices are used by individuals to "derive agency in the doing of strategy" in their own work context (Jarzabkowski et al., 2007, p.18). Where areas B or C would be focal areas, a study is likely to adopt a more macro lens to analyze how and why particular types of activities have strategic outcomes. The link between micro actions and macro implications might explore how the evolution of capabilities among organizational members carries broader strategic consequences (e.g. Salvato, 2003) in area C, or a large change's implementation at an organizational level (e.g. Balogun & Johnson, 2004, 2005; Rouleau, 2005) in area B. As such, the s-as-p perspective helps make sense of strategically

significant outcomes for an organization, whether the focus lies on the micro-details of activity, more institutional phenomena, or their interplay (Jarzabkowski et al., 2007).

a) Praxis

Jarzabkowski and Spee (2009, p.5) define praxis as "the stream of activity in which strategy is accomplished over time." Specifically, Jarzabkowski et al. (2007, p.9) describe *praxis* as "the interconnection between the actions of different, dispersed individuals and groups and those socially, politically, and economically embedded institutions within which individuals act and to which they contribute." As a *stream of activity*, strategy *praxis* links micro, meso and macro doings of individuals and groups to the wider institutional context in which these actions are performed and which they, in the process, contribute to shape. Hence *praxis* can be studied at these three levels or in their interface. (Reckwitz, 2002; Sztompka, 1991; Jarzabkowski & Spee, 2009) A micro *praxis* study might focus on individual or group experience during a particular episode such as a workshop (Jarzabkowski & Spee, 2009; Samra-Fredericks, 2003), while a meso analysis might examine praxis at a sub-organizational or organizational, level, as by investigating a change process (Jarzabkowski & Spee, 2009; Balogun & Johnson, 2005). At a macro level, a study might investigate strategy *praxis* within a particular institutional setting such as patterns of action performed in a given industry (Jarzabkowski & Spee, 2009; Lounsbury & Crumley, 2007).

b) Practitioners

Strategy praxis, encapsulating what individuals or groups do, is closely intertwined with the concept of *practitioners*. Who are strategy practitioners, the *strategists*? According to Jarzabkowski and Spee's (2009) literature review of the s-as-p research field, *strategy practitioners* are the people engaged in the work of strategy. According to Jarzabkowski and Whittington (2008, p.101-102), these individuals include "those directly involved in making strategy" such as managers and consultants, as well as actors "with indirect influence" such as policymakers, the media, and business schools. However, while strategy-making has for long been regarded as a predominantly top-down process exercised by senior managers, strategy formulation and execution thus viewed as two separate work entities (Jarzabkowski et al., 2007), studies increasingly showcase the key roles of middle managers and employees across the organizational role hierarchy as important strategic agents. Specifically, Jarzabkowski et al. (2007) highlight that studies (e.g. Balogun & Johnson, 2004, 2005;

Mantere, 2005; Regnér, 2003; Rouleau, 2005) growingly consider the social, interpretative, linguistic and personal knowledge bases through which individuals acting in operational roles, while not always holding a formal strategy role, shape strategy. Internal firm actors are thus central *strategy practitioners* and may include any individual with a designated hierarchy, line or staff role within an organizational structure (Jarzabkowski & Spee, 2009).

In addition to internal practitioners, stakeholders outside an organization may also influence strategic outcomes. Empirical studies in the s-as-p field have, for instance, examined the roles of business consultants (e.g. Clark, 2004; Whittington et al., 2003), customers (e.g. Lowendahl & Revang, 1998), and environmentalist groups (e.g. Whittington et al., 2003) in fashioning strategy praxis. As Jarzabkowski et al. (2007) observe, a wider definition of who is a strategist and consideration of the strategic roles of diverse organizational and external actors, allows for far richer insight as to the range of practices that individuals use in shaping strategy. As such, *strategy practitioners* can be understood as any actor "who shape[s] the construction of practice through who they are, how they act and what resources they draw upon" (ibid., p.11). These actors are in the s-as-p literature classified into internal individuals, internal aggregate practitioners such as a team or business division within an organization, and external aggregate practitioners (Jarzabkowski & Spee, 2009). A study may, for instance, explain the micro-praxis of individual practitioners, or the meso-praxis of external aggregate practitioners (Jarzabkowski & Spee, 2009).

c) Practices

Practices are referred to by Jarzabkowski and Spee (2009, p.19) as "social, material and embodied ways of doing". Reckwitz (2002, p.249) further expands on practices as:

> *routinized types of behaviour which consist of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge.*

Practices provide the behavioural, cognitive, procedural, discursive and physical resources through which organizational actors are able to interact in order to socially accomplish collective activity. Practices thus serve as units of analysis in studying how strategy-as-practice is constructed; what practices are drawn upon and how, how their use changes over time, and how patterns of use shape strategy praxis at sub-organizational, organizational, or institutional levels. (Jarzabkowski et al., 2007) In their multi-dimensionality as per the above descriptions, practices are subject to a number of definitions within and beyond the s-as-p

research agenda (Chia, 2004), this multiplicity deriving from the various philosophical and theoretical premises of practices (Schatzki, 2006; Jarzabkowski & Spee, 2009). Jarzabkowski and Spee (2009) remark that a difficulty of identifying practices is that they constitute interrelated elements of activity. Hence one way to decipher practices, is to 'bundle' them within a particular spatial and material context (Schatzki, 2006, p.1864):

> *…that an organization is a bundle of practices and arrangements thus implies that an organization consists in interrelated practices transpiring amid interconnected material orders. An academic department, for instance, consists in interrelated practices of grading, teaching, advising, research, decision making, and ceremony transpiring amid interconnected offices, classrooms, auditoriums, laboratories, and so…*

Jarzabkowski and Spee (2009, p.18) further highlight that the use of gerunds in Schatzki's (2006) definition emphasizes "the active and constitutive nature of practices; they are means of doing in which organizing is constituted, rather than static concepts or objects to be employed." Yet other perspectives on practices consider them in their material aspects. For example, Orlikowski (2007, p.1436) notes that there is an "absence of any considered treatment or theorizing of the material artifacts, bodies, arrangements, networks and infrastructures through which practices are performed." The author conceptualizes practices as sociomaterial in that the doing of any activity cannot be separated from the material assemblages in which doing occurs; humans and artefacts "entail or enact each other in practice" (Orlikowski, 2007 p.1438). Chia (2004, p.32) further portrays practices as a repertoire of "background coping skills" upon which actors unconsciously tap in their everyday "being". Understood in these terms, practices can be conceived as *constitutive* of acting, more than separate 'things' employed as part of acting (Jarzabkowski & Spee, 2009). Still other authors point out the discursive nature of practices by analyzing strategists' forms of talk (e.g. Laine & Vaara, 2007; Samra-Fredericks, 2003; Alvesson & Karreman, 2000)

Practices in their often unconscious yet embodied forms, and as constitutive of acting, can also be conceived as forms of *knowing*. Orlikowski (2002, p.251) posits that "tacit knowledge is a form of 'knowing'" and thus "inseparable from action because it is constituted through such action." In a study of product development practices in a Dutch multinational software company with global operations, Orlikowski (2002) identified some core practice bundles – "sharing identity", "interacting face to face", "aligning effort", "learning by doing", and "supporting participation" –, each encompassing specific activities and contributing to particular knowing. For example, the practice of "aligning effort", including activities such as using a common project management model, was found to lead

to knowing how to coordinate through aligning effort over time and space. The distinction between "knowing" and "knowledge" is highlighted: while the former is often conceived in organizational literature as a resource to be created or managed (Orlikowski, 2002, p. 269; Alvesson & Karreman, 2001), the latter term emphasizes the central role of human agency in realizing knowledge work, "the importance of ongoing and situated action" (Orlikowski, 2002, p. 269). From a *knowing* lens, individuals "act knowledgeably as a routine part of their everyday activity…continually and routinely monitoring the ongoing flow of action – their own and that of others – and the social and physical contexts in which their activities are constituted." (ibid., p. 249; Giddens, 1984; Lave, 1998; Hutchins, 1991; Suchman, 1987)

Practices, however, are not only what people *do*: Schatzki (2005, p.473) depicts them as "*social sites"* within which events, entities and meaning help compose one another. Moreover, practices are often learned from others, thus based on sensitivity to what other practitioners are doing (Barnes, 2001). Building on these various understandings of *practices*, this study considers the concept in its social, material and embodied aspects (Jarzabkowski & Spee, 2009), including knowing (Orlikowski, 2002) and social interaction. Practices identified in the Analysis encompass 'bundles' of activities, tools and behaviours, which circular strategy practitioners in the two case organizations engage in or draw upon. Some of the identified social practices interact with material ones such as infrastructure arrangements or regulatory frameworks; together they form the sociomaterial contexts in which *circular strategy praxis* is realized.

2.3. *Circular* Strategy-as-Practice? Bridging Two Literature Streams

2.3.1. Research Purpose: Circular Strategy Praxis, Practices, and Practitioners

This study is interested in how circular economy business model strategies are enacted in two case organizations and their surrounding networks. The analytical focus lies at the intersection of *strategy praxis*, *practices* and *practitioners*, and circular business model strategies as illustrated in Figure 4, which combines Antikainen and Valkokari's (2006) framework for sustainable circular business model innovation, and Jarzabkowski et al.'s (2007) conceptual framework for analyzing strategy-as-practice. The phenomenon under scrutiny hence is *circular strategizing* and constitutive *praxis*, *practices*, and *practitioners*. As shown in Figure 4, the study of *circular strategy-as-practice* is situated in the interface of the business, meso, and business ecosystem or macro, levels. A network-level analysis focuses on relationships among industrial firms from different industries, along with

governmental and societal organizations involved as knowledge providers or coordinators (Paquin & Howard-Grenville, 2013). Thus, the aim is to understand how individual work activities and practices are influenced by, and shape, organizational, network, and institutional contexts. The three main research questions are:

1. What activity streams make up circular strategy praxis in the two case organizations?
2. What are circular strategy practices; what do circularity practitioners do, and how?
3. Who are circular strategy practitioners?

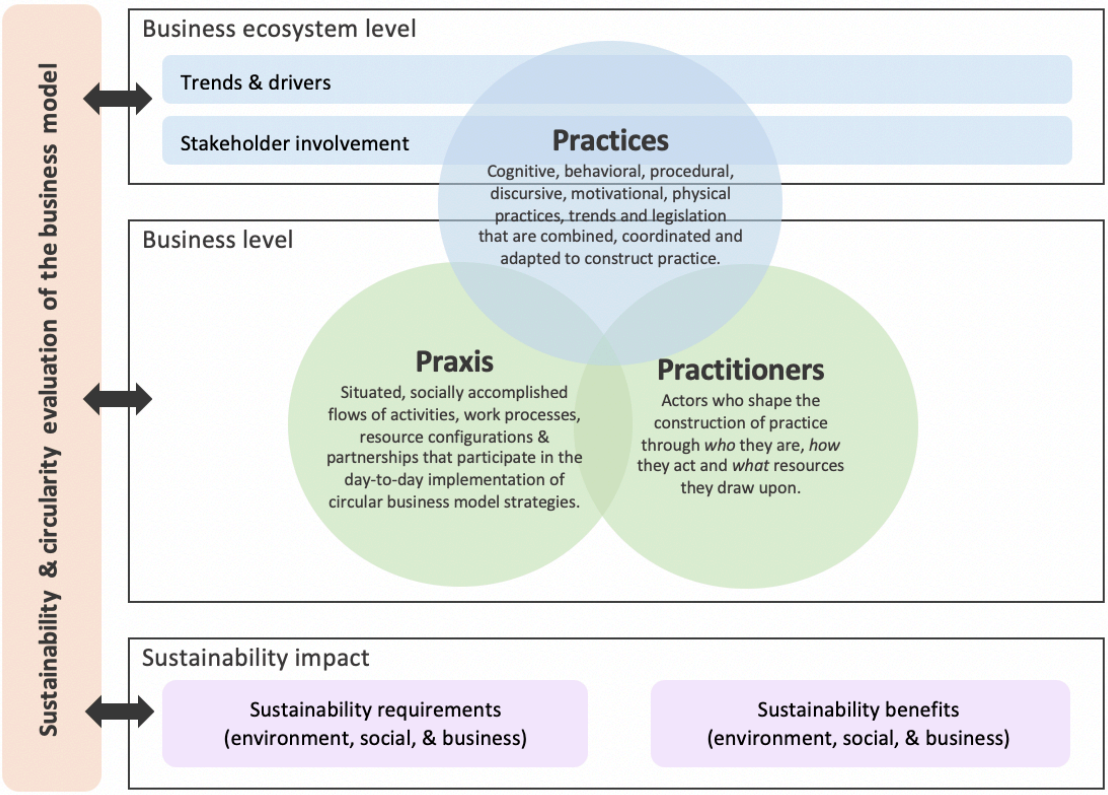

Figure 4. A framework to analyze circular strategy-as-practice combining Antikainen & Valkokari (2016) and Jarzabkowski et al.'s (2007) frameworks.

Circular strategy praxis in the two case studies is analyzed from meso and macro lenses to visualize and describe the overall activity flows, as well as the internal and external stakeholder arrangements that shape circular strategy in each unit of analysis. The circular business model innovation frameworks discussed earlier are used to make sense of *circular strategy praxis* in the two case companies. Examining *circular strategy practitioners* centers on this study's interview participants; their work roles and responsibilities, perceptions and experiences of everyday work activities, and thinking. These roles are clustered into

"circularity agent" role archetypes bridging both case studies. In examining *circular strategy practices*, the purpose is to identify activity bundles around social, sociomaterial, and embodied activity dimensions of the concept with respect to CE.

2.3.2. The Research Gap

This study addresses research gaps highlighted both in the circular economy business model, and s-as-p, literatures. From a s-as-p field perspective, Jarzabkowski and Spee (2009) note that most empirical work has focused on studying individual or aggregate actors in relation to micro or meso, that is sub-organizational or organizational, *praxis*. The authors note the relatively low attention to extra-organizational actors and macro-praxis. Regarding this latter gap, Jarzabkowski and Spee note that empirical evidence is scantest in explorations of individual organizational actors in relation to macro-*praxis*, extra-organizational aggregate actors in relation to micro and meso-*praxis*, and the domain of macro-*praxis* in general. There, thus, has been rather limited research focus on the interplay between institutionalized strategy practices and the actions and interactions of strategy practitioners (ibid., 2009). This study specifically examines individual, organizational, and extra-organizational actors, in relation to both meso and macro-*praxis*. Furthermore, CE strategy has so far not been studied from a s-as-p lens, which is here attempted.

From a circular economy business model perspective, while several circular business model frameworks are proposed in the CE literature, empirical evidence as to these frameworks' enactment in practice remains limited (Evans et al., 2017; Bocken et al., 2016; Esposito et al., 2018; Millar et al., 2019). The extant CE business model literature recognizes that circular business model implementation is a complex endeavor. However, while the multifaceted and networked natures of circular economy strategy implementation are underscored, practical examination of how this complexity manifests and unfolds, is needed. Bocken et al. (2016), for instance, advance that circular design and business model strategies should be implemented hand-in-hand, a synchronized execution requiring an overall business mindset change towards "circularity". The authors further observe (p.315) that "the move to a circular economy is inherently complex and 'systems thinking' is essential to understand the wider impact of the changes in business models and design, especially as they are interrelated." This study forays into some of this complexity based on two case studies.

Regarding *circular strategy practitioners*, a study by Kokoulina et al. (2019) examines a regional industrial symbiosis system's emergence and the particular individual

championing roles and behaviors central to the new industrial arrangement's development. Champions are defined as individuals who stand out in their organizations through their innovativeness, willingness to take risks, and transformational leadership styles (Howell & Higgins, 1990) Kokoulina and colleagues' (2019) study is a useful reference in looking at practitioner roles in the context of circular strategy enactment. Industrial symbiosis can be considered a business model innovation (Foss & Saebi, 2017) and an essential approach to developing a circular economy (Kokoulina et al., 2019). This study's exploration of circular strategy practitioners builds on Kokoulina et al.'s analysis in also considering the specific individual roles and capabilities core to circular strategy enactment both inside an organization and in relation to partner stakeholders within a network.

Aside from *championing* roles in circular business model innovation, some key competencies are highlighted in the literature with respect to circular economy leaders. For example, Lacy et al. (2014) identify five capabilities of successful circular leaders: business planning and strategy, innovation and product development, sourcing and manufacturing, and reverse logistics and return chains. Joustra et al. (2013) further highlight eight foundational skills for circular economy project teams: entrepreneurial and developing, craftsmanship related to products/services, systems thinking and capability to identify causal loops, future-orientation and out-of-the-box thinking, celebration of diversity, addressing insecurities, designing circular systems, products and services, and being creative, innovative and connected. Regarding leadership, the appreciation of a new strategic direction and understanding its benefits and risks, along with the ability to shape a common understanding in the business of the new strategic direction, are raised as key leadership attributes for circular business model enactment (e.g. Roos, 2014; Bechtel, 2013). De los Rios and Charnley (2017), in turn, underscore the need for new design skills and understanding to support the CE, and formulate ten "design skills necessary to create products for closed loops" (p.15). These identified roles and capabilities in relation to circular business model design and implementation are useful bases for this case study.

2.3.3. Circular Strategy: Patterns amongst Deliberate and Emergent Actions

Identifying practices core to circular strategy enactment in the two case studies entails deciphering behavior and action *patterns* from the empirical material. Mintzberg and Waters (1985, p.257) define strategy as a "a pattern in a stream of decisions", whereby organizational actors engage in streams of behavior within which strategies manifest as

patterns. With regards to circular business model strategizing, an important question is: what streams of behavior characterize the implementation of circular strategies, and to what degree are they consistent? Mintzberg and Waters (1985, p.257) distinguish between deliberate and emergent strategies, the latter "patterns of consistencies realized despite, or in the absence of, intentions." This notion of strategy as simultaneously deliberate and emergent, manifesting through intentions and *in spite of* predetermined plans, is intriguing in the context of CE strategy realization. Indeed, circular strategy, while often clearly formulated and carefully designed by undertaking companies, is also by nature emergent in representing a novel and iterative experiment within generically 'linear' value chains.

The sociomaterial contexts in which practices are enacted and which constitute organizations are also inherently emergent and shifting (Orlikowski, 2007). As Chia and Holt (2006, p.637) describe, "agent identities and strategies are co-constructed relationally through direct engagement with the world they inhabit; practical actions and relationships precede individual identity and strategic intent." They pursue (p.650):

> *Both strategy and identity develop through everyday practical coping and through the cultivation of a style of engagement, and this style or modus operandi is what gives consistency, stability, and ultimately, identity to the agent, be it an individual or an organization, as a locus of action.*

It is hypothesized that circular strategy enactment unfolds through activity and behavior *patterns* (Mintzberg, 1987), but perhaps also *deviations* from consistency, both consistency and inconsistency fashioned through everyday 'coping' and engagement with others. Consistency of actions and behaviors may manifest despite the lack of an overall plan (Chia & Holt, 2006) and amidst "strategic ambiguity" (Chia, 2014, p.20) made of dilemmas and challenges induced by 'circular economy thinking' in one's everyday work. Hence this study examines circular economy strategy as both a designed and continually emergent phenomenon, sewed by individual thinking, interactions and engagement with the wider organizational and institutional contexts. Circular strategy, like other strategic initiatives, can entail organizational change. Yet while "strategy involves change", it also entails "a great deal of maintenance and reproduction" (Jarzabkowski, 2005, p.5). The s-as-p lens is more concerned with how strategy is constructed, rather than how a company changes, to understand the interactions through which strategy unfolds over time, each with potential for either stability or change (Tsoukas & Chia, 2002; Jarzabkowski, 2005).

What, then, makes an activity *strategic* towards circular outcomes? Johnson et al. (2003) describe an activity as strategic in so far as it is consequential for the strategic directions, survival and competitive advantage of the company, whether or not these outcomes flow from an intended and formally articulated strategy (Jarzabkowski et al., 2007). Circular strategy is here understood as business model innovations in the forms of organizational and industry-level strategies, programs, arrangements and initiatives designed to create new flows for products, parts and materials.

3. RESEARCH METHODOLOGY AND METHODS

3.1. Ontological and Epistemological Frameworks

This study investigates how business model strategies designed to *slow* resource loops, are enacted in practice by people in distinct work roles and organizational settings. This inquiry is built on a qualitative research approach, suitable for "exploring and understanding the meaning individuals or groups ascribe to a social or human problem." (Creswell, 2014, p.4) A qualitative research approach entails collecting and analyzing non-numerical data with the goal to understand the particularities of the elements selected for study, rather than generalizing to a target population. As an in-depth inquiry, qualitative research invites immersion into a particular social setting and emphasis on understanding participants' perspectives, along with comprehensive description of the topic of study. (Daniel, 2012) Qualitative research thus is well suited for a foray into the situated and network-level activities, processes, employee roles, and practices that shape the phenomenon of circular strategy enactment, from the perspectives of the actors engaged in that work.

This research adopts a critical realist ontological and epistemological lens. A critical realist ontological paradigm views reality as objective, existing independently of human knowledge thereof, and thoughts and beliefs, yet interpreted through social conditioning. Epistemologically, a critical realist philosophy posits that only observable phenomena can constitute reliable data and facts, and focuses on "explaining within a context or contexts". (Wahyuni, 2012, p.70) Even where a critical realist position presumes the existence of an external reality, the act of understanding and acquiring knowledge of this reality is mediated by our theories and notions of it. Moreover, understanding a social reality from a critical realist perspective entails acknowledging the particular social structures and powers that have produced the very social phenomenon under scrutiny. (Danermark et al., 2002)

Understandings of social structures and powers are, in turn, often encompassed in theories and notions that are themselves socially produced, and hence in flux (ibid.).

From a critical realist standpoint, I consider that within the case studies of this research, there exists an objective reality of how circular strategies are enacted as activities and processes, sociomaterial practices, and by whom. This *enacted* dimension of strategy is viewed as an objective reality consisting of *what* individuals *do*, and *how* – by which means – in the exercise of their roles. Making sense of this reality, however, cannot be attempted without understanding individual experiences, as well as team, organizational, and multi-stakeholder network contexts within which activities are enacted, and the social interactions and relationships shaping them. How practitioners make sense of their doings and contributions to circular economy through their work, is subjective. So is my interpretation of particular activity flows and processes as constitutive of *circular* strategy-as-practice. Therefore, my role is to understand both the more objective flows of activities that contribute to circular strategy implementation in the two case organizations, and the subjective individual experiences and perceptions that make sense of these activities. As I am not an employee nor affiliated with the organizations examined in this study, my perspective is *etic*. Thus, although biased towards circular economy – interested in deciphering circular economy business model strategies –, my outsider perspective vis-à-vis the case organizations brings objectivity to the analysis, as I report observations derived from the collected empirical evidence without being an insider member of these social contexts.

3.2. Research Design

3.2.1. A Multiple-Case Study

This research is a case study, a method well suited for inquiries into "a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." (Yin, 2003, p.13) In diving into a particular real-life context, a case study seeks to "confront" theory with the empirical world (Piekkari et al., 2009, p.569). Secondly, a case study as a research method suits inquiries addressing "how" and "why" questions such as those at the core of this study. Thirdly, a case study is appropriate for situations where a researcher has little control over the observed behaviors, as for instance strategy *praxis* or *practices*, and where the analyzed phenomenon is emergent and contemporary, as is circular economy. (Yin, 2003) The method further encourages the use of a diverse range of materials as empirical evidence, from interviews,

to website communications, to regulatory frameworks. Finally, a case study supports a social realist philosophical position in giving central importance to the contextual conditions of an examined phenomenon; contextual factors often intertwined *with* the phenomenon. (ibid.)

This study uses a multiple-case study design to explore *circular strategy-as-practice*, with two company cases chosen as study subjects. Both firms apply circular economy business model strategies aiming at *slowing* resource loops (Bocken et al., 2016). However, these business model strategies are enacted within two distinct industry, organizational, and country contexts. Using a multiple-case study provides added empirical evidence towards the research purpose and questions, making a study more compelling and robust (Herriott & Firestone, 1983). As authors have noted the still scant number of empirical cases of circular business model strategy implementation (Bocken et al., 2016; Evans et al., 2017; Esposito et al., 2018; Millar et al., 2019), examining two companies is insightful for this research. The two cases on one hand, offer evidence around two somewhat contrasting situations (Yin, 2009) of circular strategy enactment, yet on the other hand, present similarities that may support some literal replication (Yin, 2009) – common findings in relation to the phenomenon of *circular strategy-as-practice*. I thus hypothesize that insights on *circular strategy praxis, practices,* and *practitioners* will show some degree of convergence across the two cases, despite unfolding in separate industry and organizational contexts.

This study is exploratory in its purpose to understand a population (Daniel, 2012) – *circular strategy practitioners* in their everyday work contexts –, and identify questions, concepts and methods that may be used in future studies around the topic (Yin, 2018). The understanding of *circular strategy praxis, practices* and *practitioners* drawn from the two case studies may inform further studies on circular strategy enactment in a more diverse sample of organizational, industry, or circular business model strategy, contexts. This paper's findings may contribute a starting point for studies using different research methods to investigate similar research questions, for example action research or an ethnography to draw understanding *via* action as part of the work contexts of *circular strategy practitioners*.

3.2.2. Two Case Organizations

The two case studies were sought with the aim to explore circular strategy enactment within two different organizational structures; distinct internal and external network structures, and/or sets of challenges and enablers in the everyday enactment of a circular economy program. Thus, the point of departure in searching for two case companies was

formulating core research questions (Wahyuni, 2012) and the target population (Eisenhardt, 1989). I used non-probability sampling, including a combination of purposive and availability, sampling methods, to select the two case organizations. Purposive sampling guided the choice of information-rich cases in relation to my research questions (Bloor & Wood, 2006), while availability sampling (Daniel, 2012) supported leveraging opportunities to create contact with potential company case participants via my informal network and haphazardous encounters. The first case unit, Martela, piqued my interest in the context of a course project, where my team-mates and I developed a business model solution to address the problem of office furniture waste. Martela's Workplace as a Service model served as inspiration to our project, and I was not previously well familiar with the company. As I shared about this company interest to a classmate in a later course of spring 2019, my fellow student happened to know Martela's HR manager, whom I approached by email with my research plan and who accepted to forward it to the company's Sustainability Manager.

The selection of Simple, Very Simple, was also the product of a fortunate coincidence. While on my study exchange semester at the Copenhagen Business School in spring 2020, I was eager to find a Danish company as a second case unit. With Martela already confirmed, I more deliberately searched for companies in the home goods/furniture sector, or similarly implementing a product-as-a-service business model strategy. However, it is by reading the program line-up of a circular economy-themed sustainability conference held at the Copenhagen Business School in March 2020 (CBS, 2020, March 5) that I came across Simple, Very Simple. Reading more about the company's work in the field of household appliances, it appeared like a very insightful complementary case to Martela. I contacted the Founder-CEO by email, who agreed to participate in the study and arrange a first interview. The two case organizations are presented below.

Martela Oyj is a Finnish office furniture and workspace family company founded in 1945 with head office in Pitäjänmäki, Helsinki. Martela designs and manufactures user-driven workplaces and learning environments where various types of spaces support individual working and learning. (Martela, 2020b; 2020a) Throughout the years since its founding, the company has transformed from being a furniture manufacturer, to becoming a "partner for developing workplaces and learning environments." (Martela, 2020a) Circular economy principles such as long-lasting product design and lifecycle thinking, are core pillars of Martela's work (Martela, 2020e). The Martela Workplace as a Service model was introduced in 2014, and in 2018 complemented with a Learning Environment as a Service

model designed for educational institutions. Both models fit into Martela's overall 'Lifecycle' strategy introduced in 2014. (Martela, 2015; 2019) Martela performs a wide range of activities, from product design, to production and sales, to furniture logistics, to product maintenance and optimization (Martela 2020e; 2020f). Production facilities are located in Finland and Poland, and the company's main markets are Finland, Sweden and Norway along with a global network of dealers (Martela, 2020b). Today, Martela employs approximately 470 professionals in four different countries. (Martela, 2020d)

Simple, Very Simple ApS (SVS) is a Danish refurbished white goods company founded in 2019 and with head office in Frederiksberg Municipality, Copenhagen. The company sells household appliances that have been discarded by previous users, collected, inspected, tested, fixed, and made ready for a new use-life. (Simple Very Simple, 2020b) SVS acts as refurbished appliances' retailer, while appliance remanufacturing is fulfilled by the company's close partner, Danish remanufacturing firm, Recirk (personal interview, March 11, 2020). SVS's mission is to "give everybody the opportunity to act on climate by changing how production and consumption works today, through climate- and natural resource positive solutions." (Simple Very Simple, 2020a) To that end, SVS works with large household appliance producers and producer responsibility organizations, as well as certified e-waste recyclers and several Danish municipalities' waste management companies. SVS also follows the international CENELEC standard for re-using larger household appliances, and the work is aligned with the EU WEEE, Eco-design, and Circular Economy directives. (Simple Very Simple, 2020b) At present, the company employs four professionals including the founder-CEO. (personal interview, March 11, 2020)

3.2.3. Different Industries and Organizations, Similar Circular Strategies

The two case organizations differ in a few important respects: they operate in seprate countries and industry fields, office furniture and household appliances, respectively, operationalize distinct circular business model strategies, and are at different stages of circular economy strategy implementation – established yet evolving at Martela, and at an early exploration phase at Simple, Very Simple. Yet the companies share attributes that make them an interesting case unit pair. Firstly, both implement a CE strategy aimed at extending product lifecycles through reuse in their respective industries. Secondly, both offer products and services designed to fulfil quotidian household or office space services: workspace comfort and flexibility, and convenient, repeatable and on-demand, clothes and dishware

washing at home. Thus, both firms' business models address specific user habits, norms, values and preferences relating to how, where, and when we work or wash clothes and dishes (van Vliet et al., 2005). Thirdly, albeit located in Finland and Denmark, both case studies evolve and enact circular strategies within an overarching EU institutional and regulatory context, and in response to changing user needs and global industry trends. These core similarities are interesting to explore in relation to the distinct ways in which each company realizes product lifecycle-extension activities such as collection, (re)manufacturing and sales. Whereas Martela performs these activities via an internal arrangement of company functions and processes, SVS operates within a network of close organizational partners, each fulfilling a specific role towards enabling a second life for white goods.

The two units of analysis can be viewed as "representative and typical" cases (Henn et al., 2006) of business model strategies to extend product lifecycles. Since circular business model strategies in the office furniture and household appliance sectors are still emergent innovations, the notion of "typical" example may be premature, although one might speak of a relatively commonly practised approach to *slowing* resource loops. Martela implements a product-as-a-service model to its workspace solution offer to client organizations, a prominent circular economy and product-service-system (PSS) strategy. The company also has set up an internal logistics scheme to deliver and collect used furniture items, with a large portion of recovered pieces repaired or refurbished for resale. These activities and their execution provide a representative case of circular strategy enactment through a company's internal processes and structures. Simple, Very Simple, can also be regarded as a representative case of a young enterprise working towards home appliance reuse with the support of a network of partner organizations and acting in the realm of a pivotal regulatory scheme, Extended Producer Responsibility in this case. This study's theoretical sampling, though limited to two units of analysis, aims at insight on *circular strategy praxis, practices* and *practitioners* that may be extendable (Eisenhardt, 1989) to firms with similar product lifecycle extension business model strategies realized internally or through partnership.

3.3. Data Collection

Interviews are the primary data collection method used in this study. Indeed, interviews are well suited for studies requiring an understanding of deeply rooted phenomena or experiences. Moreover, hearing perspectives from informants holding distinct organizational and extra-organizational roles, is an important means to obtain nuanced

understanding of circular strategy enactment 'reality' from a critical realist lens. (Eriksson & Kovalainen, 2008) The analyses of Martela and Simple, Very Simple, are conducted through cross-sectional research, with data collection conducted within a relatively short time period (Daniel, 2012), an approximately one year's timeframe between May 2019 and June 2020. Interviews with informants linked to the company cases were not organized simultaneously, as data collection at Martela was arranged in spring-summer 2019 and with Simple, Very Simple and partner organizations, in spring-summer 2020. In addition, cross-sectional case studies "should include participants selected from different stages in their trajectories" (Mills et al., 2010, p.267). The case organizations indeed operationalize different circular strategy programs at different stages of development, and interviewees hold diverse roles within and as part of the organization's supportive stakeholder network.

Research interviews were arranged with a total of 10 employees working in specialist, middle-management, upper management and founder-executive roles in the two case companies and partner organizations of Simple, Very Simple. The interview participants at Martela were suggested by the Group's Sustainability Manager, my primary company contact throughout the study. Interviews were arranged with colleagues from distinct company functions, as per my expressed wish for a heterogeneous, work role and function-wise, pool of informants. A further referral upon interviewing the Sustainability Manager allowed me to organize a phone interview with the company's CEO (until 19.10.2020). At Simple, Very Simple, the founder-CEO was my primary contact. Following our initial interview, he referred me to colleagues from partner organizations as per my interest to hear perspectives from diverse stakeholder groups connected to the company such as municipalities, producer responsibility organizations, and household appliance producers. As such, this study's interview participants were found via a combination of purposive sampling and the "snowball" effect of further referrals (Bryman, 2012).

Interviews lasted for approximately an hour and took place at the employees' workplaces in the Helsinki region with Martela informants throughout spring-summer 2019, with one interview conducted over the phone. With SVS and partner organization informants, conversations were held on Microsoft Teams or over the phone as a result of separate country locations and the Covid-19 pandemic context of spring-summer 2020. The interview with SVS's founder took place at a coffee shop in Copenhagen in March 2020 and lasted for one hour and a half. Interviews with Martela informants were conducted in Finnish and with SVS's founder and connected informants, in English. Although not a first language to the study informants nor I, the interviews were still rather fluent. At times when an English

language equivalent to a Danish term was sought, I would suggest potential terms in light of the discussion context, and a suitable equivalent would be found through this exchange.

The interviews were semi-structured to support both "what" questions aorund company activities and processes, and "how" questions, to capture informant experiences and perceptions (Eriksson & Kovalainen, 2008) of their work roles in relation to wider activity flows. A semi-structured approach also allowed addressing particular themes to guide the conversation such as "circular economy", "work roles and responsibilities", or "skills", and asking follow-up questions to further inquire about topics raised in an informant's speech (Wahyuni, 2012; Rubin & Rubin, 2005). An in-depth interview approach was also used based on Rubin and Rubin's (2005, p.20) model of "responsive interviewing", whereby the research design and questioning are kept relatively flexible and responsive so as to facilitate the emergence of new information, and adapt to unexpected directions, along the interview. The general interview questions are presented in the Appendix; questions were adapted based on the informant's specific work role and organization, insights from the background research, and in response to what was expressed during the discussion.

All interviews were recorded on a recording device and transcribed within the next week. Notes were taken during the interview to capture essential observations and as back-up to the audio records. Informant citations presented in the Analysis chapter were translated to English where their original language was Finnish, and where appropriate only sparsely edited for clarity. To prepare for each interview, I consulted publicly available information sources about the two case firms and SVS's partner organizations, including company websites, social media communications, annual and sustainability reports, press releases and mentions, and relevant EU frameworks such as directives underpinning Extended Producer Responsibility. These documents also served as secondary empirical material for this study. After each interview, I asked the participant for additional internal documents or reports to support the research. Although complementary materials were not always available to share, interviewees referred me to websites and/or EU frameworks for supporting information.

3.4. Data Analysis

The primary and secondary empirical materials are examined using thematic analysis, whereby I try to discern patterns and themes across the data (Given, 2008; Braun & Clarke, 2006). Thematic analysis entails dismantling, segmenting and reassembling data into findings that can feed theoretical insight (Boeije, 2010). My aim is to gain a rich understanding of each case organization, then proceed to cross-unit analysis along themes

identified in each case, on a quest for theme convergence. In the search for themes, I assign codes to semantically connected data (Figure 5), for example mentions of "connection" and "bridging". Assembled into clusters, these codes yield certain thematic categories (Strauss & Corbin, 1998), as 'collaboration'. The resulting code clusters and thematic categories are then reflected back to existing theoretical concepts (Boeije, 2010) such as "value networks" (Allee, 2008). This dialogue between thematic categories and theoretical constructs produces a novel construct, with 'collaboration' here identified as a *circular strategy practice*.

The data codes stem from "repeated readings" of the empirical materials, as each new reading has potential to yield novel patterns, meanings and connections (Braun & Clarke, 2006). Deciphering thematic categories, in turn, is supported by case cross-comparison and data triangulation (Patton, 2002) – analyzing different sources of empirical evidence against each another (Eriksson & Kovalainen, 2008). Interviews are examined against secondary sources, and the combined evidence against circular economy business model innovation and strategy-as-practice frameworks. This process involves an "interplay between theory and empirical observations" (Dubois & Gadde, 2002, p.559) blending inductive and deductive reasoning, hence abductive reasoning, which assigns "primacy to the empirical world but in the service of theorizing" (van Maanen et al., 2007, p. 1149). This process of "systemic combining" makes use of extant concepts "in a sensible way to create a reference and to function as a guideline when entering the empirical world" (Dubois & Gadde, 2002, p. 558). As Figure 5 illustrates, the reasoning process begins deductively – I foray into the empirical material from the theoretical lens of strategy-as-practice. Yet the path to ultimately resulting constructs unfolds primarily through inductive analysis; from codes, to forming code clusters, to consolidating broader thematic categories. Linkages between thematic categories and existing theoretical constructs are drawn abductively, from which process novel theoretical constructs emerge.

Since case studies using qualitative research methods aim at producing credible knowledge from interpretations of phenomena, case uniqueness and contexts are of central importance, thereby hindering case findings' generalizability (Parker, 2012). Yet as Yin (2009, p.15) highlights, "case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes" – their purpose is to "expand and generalize theories", rather than "enumerate frequencies". Context-specific richness and theoretical

insights drawn from the Martela and SVS cases may, thus, not be replicable across diverse contexts, but nonetheless unwrap parts of the phenomenon of *circular strategy-as-practice*.

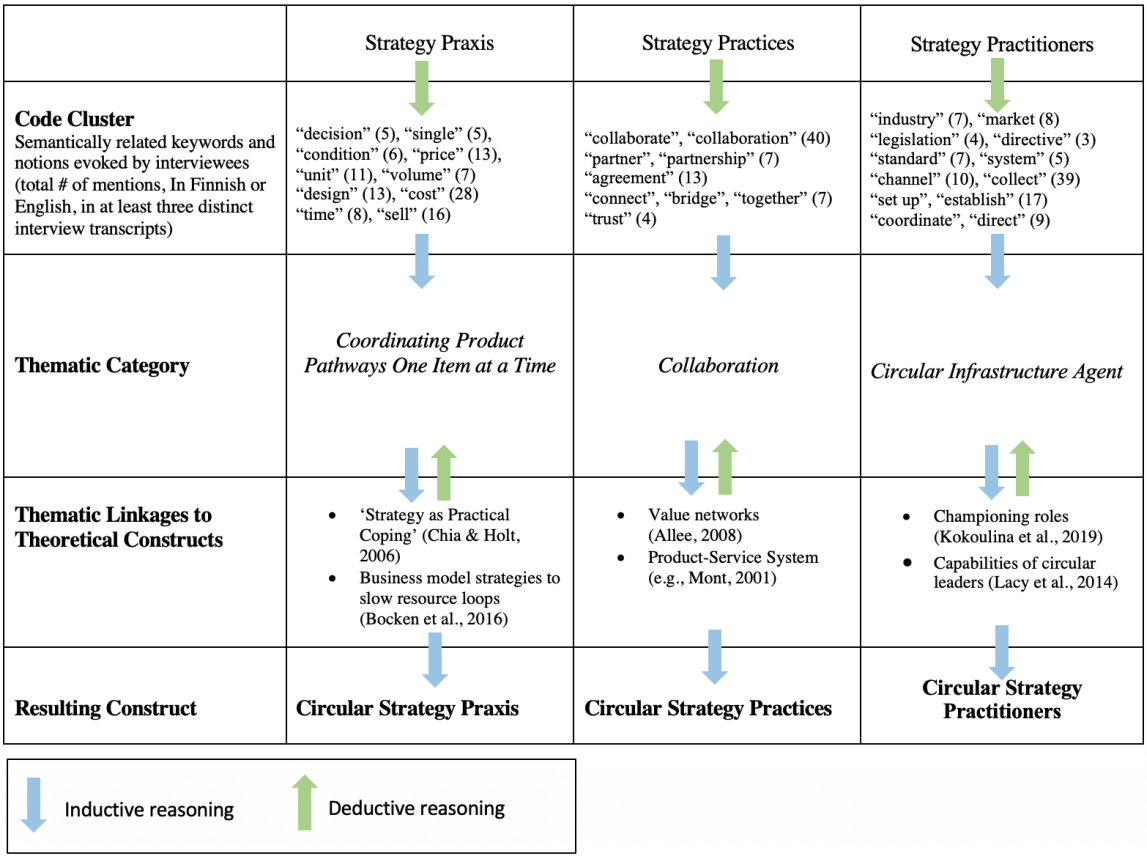

Figure 5. Abductive reasoning towards constructs of *circular strategy-as-practice.*

A qualitative study's quality may be more appropriately assessed not from the lens of generalizability, but along dimensions of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985; Guba & Lincoln, 1989). Credibility refers to the accuracy of data to reflect an observed social phenomenon, and transferability to the study findings' applicability to other contexts, this latter supported by rich case descriptions. Dependability relates to the reliability and replicability of a study's design and methods, and confirmability to the extent to which others might be able to confirm study findings to reflect the experiences of case informants, rather than a researcher's own agenda. (Lincoln & Guba, 1985; Wahyuni, 2012) This can be enhanced through documentation of the research process (Lincoln & Guba, 1985; Wahyuni, 2012) as field notes to record what is learned, new questions along the way, and ideas that might feed later insights (Eisenhardt, 1989). Together with Lincoln and Guba's (1985; 1989) criteria, this study aspires at Eisenhardt's (1989) view

that a strong theory-building study has to present new, potentially frame-breaking insights, be parsimonious, testable, logically coherent, and grounded in convincing evidence.

3.5. Ethical Considerations

A few ethical aspects should be raised in relation to this research design. One, raised by Henn et al. (2006), is the risk that study findings be influenced by the values and preferences of the researcher. Indeed, with special interest in *circular strategy praxis, practices, and practitioners*, and prior ideas as to what these constructs may encompass in the two case companies, I may be tempted to proactively search for any evidence thereof. It might also be that certain activities or practices found to make up the phenomenon of *circular strategy-as-practice* be attributed to *circular* strategy, when they might be motivated by factors unrelated or indirect to circular economy goals, specifically. As the researcher, I must accept and acknowledge that the empirical material might not echo my preconceived ideas and expectations at the onset of this inquiry. Striving at objectivity in the analysis of the empirical material is thus essential. The research process is cyclical and iterative – the three core research questions provide a starting point, but data collection, analysis, and developing tentative theoretical propositions, may call for revisiting and altering earlier or subsequent research steps, the initial research questions or used theoretical frames, over the course of the research (Henn et al., 2006).

Another ethical consideration is that I am relying on the two case organizations' gatekeepers to grant me access to interview participants. Who I interviewed, thus, was influenced by my primary company contacts' suggestions and referrals. As Henn et al. (2006, p.62) emphasize, gatekeepers may wield significant power over the research, and in negotiating certain aspects of my research design I may in the process need to "compromise [my] research plans to some degree". Although this might bear the risk of speaking with individuals who are "supporters" or "promoters" of the case company, the pool of participants interviewed for this case study is diverse, thus somewhat mitigating potential bias as to interviewee selection. In addition, it is not felt that the research design had to be altered as a result of particular company participant requests or concerns. A further ethical consideration relates to ensuring interviewee anonymity where requested, and the confidentiality of certain pieces of shared information. This means refraining from using, or formulating as originally expressed by the interviewee, certain insights if requested by the informant to be kept confidential or not used without permission, even when they might provide interesting substance or nuance to a particular question.

4. ANALYSIS: CIRCULAR ECONOMY-AS-PRACTICE

4.1. Circular Strategy Praxis

4.1.1. Framing Circular Strategies at Martela and Simple, Very Simple

Both case organizations primarily apply circular product design strategies to *slow* resource loops based on Bocken et al.'s (2016) typology. Martela's Workplace as a Service business model strategy (WaaS) enables client organizations to pay a monthly fee for the office furniture part of a workplace solution, allowing for flexibility and optimization of the furniture items used during a certain time period, with continuous access to maintenance and repair services (Martela, 2020e). This WaaS model can be seen as a product-service-system that contributes to *slowing* resource loops for office furniture pieces through investing in product lifetime extension and pieces' potential for multiple use lives, and users. In addition to *slowing* resource loops, Martela also works to *close* the loop for recovered furniture items, parts and materials, through an in-house upholstering, refurbishing and recycling operation that prepares products, in whole or in parts, for recycling, or reuse (Martela, 2020b).

Bocken et al. (2016) distinguish four design strategies aimed at *slowing* resource loops, based on which Martela's WaaS approaches include designing *long-life products*, as well as *for product-life extension*. These approaches prioritize durability in product design, and enable an item to be used over a long time period and by multiple users, respectively. Both design strategies are facilitated by *access and performance*, and *extending product value*, business model strategies (Figure 2 in the Literature Review). An *access and performance model* aims to "provid[e] the capability or services to satisfy users' needs without needing to own physical products", with value created and delivered through the maintenance of these products by the manufacturer along the use time (Bocken et al., 2016, p.312). Value is captured through a pricing per unit of service, for example in function of the product's performance. This model can bring about substantial economic benefits to the manufacturer-retailer, for the cost of extending products' lifetimes can potentially be offset by additional revenues from the products' longer use times. (ibid.)

Business model strategies for *extending product value* strive to exploit the residual value of products through organizing take-back and transportation of the used product back to the manufacturer or to a third party (Bocken et al., 2016) for remanufacturing. These activities are executed in-house at Martela. Such business model's value proposition is the capability for a firm to, after refurbishment, reoffer the product at an affordable price and

"as new" to the customer. Value is created via these take-back schemes and possible partnerships towards product pick-up points, and captured through reduced material costs, as recovering used products reduces the need for virgin raw materials for remanufacturing; these cost savings possibly superior to the potential increase in logistics costs (Bocken et al., 2016). Importantly, as later discussed, value is also captured in the form of new knowledge as to which furniture pieces are in a state to economically justify repair or refurbishment.

Simple, Very Simple (SVS) also implements design strategies aimed at *slowing* resource loops through extending household appliances' lifetimes. Like Martela, SVS's approach to a circular business model is designing *for product-life extension* of white goods, via repair and refurbishment – "discarded appliances are inspected, tested, fixed, and made ready for a new life." (SVS, 2020b). This core design strategy is operationalized through an *extending product value* business model. This latter leverages the residual value of used home appliances recovered through a partnership-driven take-back scheme (Bocken et al., 2016) that revolves around the policy frame of Extended Producer Responsibility (EPR).

EPR is defined by the OECD (2020) as "a policy approach under which producers are given significant responsibility – financial and/or physical – for the treatment of post-consumer products." EPR is thus a means to incentivize producers to account for the environmental impacts along a product's entire lifecycle, from design through to end-of-life take-back and recycling. This principle is an important instrument towards the European Waste Hierarchy and aspirations towards waste prevention, preparing for reuse, recycling and recovery (European Commission, 2020b) articulated in a few EU directives. (European Commission, 2014) Among them, the EU Waste Framework Directive (Directive 2008/98/EC) and 'WEEE Directive' (Directive 2012/19/EU) are foundational with respect to EPR. Article 14 of the former (Directive 2008/98/EC) states:

1. *In accordance with the polluter-pays principle, the costs of waste management, including for the necessary infrastructure and its operation, shall be borne by the original waste producer or by the current or previous waste holders. […]*

The 'WEEE Directive' (2012/19/EU) further specifies:

12. *The establishment, by this Directive, of producer responsibility is one of the means of encouraging design and production of EEE which take into full account and facilitate its repair, possible upgrading, re-use, disassembly and recycling. […]*

23. *[…] In order to give maximum effect to the concept of producer responsibility, each producer should be responsible for financing the management of the waste from his own products. The producer should be able to choose to fulfil this obligation either individually or by joining a collective scheme.*

Hence producers are responsible for either organizing waste treatment by their own means or as a shared endeavor with private or public waste collection and management entities. Simple, Very Simple is not the original manufacturer of the household appliances it recovers for repair or remanufacturing. The company acts as part of a network of actors engaged in the execution of EPR and channeling a portion of discarded household appliances to reuse in Denmark. *Reuse* of products that have entered municipal waste streams such as waste electronic and electrical equipment (WEEE), is specifically encouraged in the two said pivotal EU directives, although the real focus of EPR relates to the safe recycling of WEEE. With regards to reuse, Article 11 of EU Waste Framework (Directive 2008/98/EC) instructs:

1. *Member States shall take measures, as appropriate, to promote the re-use of products and preparing for re-use activities, notably by encouraging the establishment and support of re-use and repair networks, the use of economic instruments, procurement criteria, quantitative objectives or other measures. […]*

'Preparing for reuse activities' are defined (Directive 2008/98/EC, Article 3.13.) as "checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other preprocessing". The following analysis refers to 'preparing for reuse activities' as an umbrella concept including inspection, testing, cleaning, repairing, refurbishing, and upholstering activities carried out by the two case companies and partner organizations.

While the 'WEEE Directive' (2012/19/EU) sets precise recovery and recycling percentage targets for distinct WEEE categories, quantitative objectives are not specified with respect to 'preparing for reuse'. Thus, Simple, Very Simple can be seen as what Bakker et al. (2019) describe a 'gap exploiter' in capitalizing a sizeable market opportunity window for WEEE reuse, which even if actively encouraged by the EU, is for now not the chief purpose of the EU Waste Framework Directive nor 'WEEE Directive' in relation to Extended Producer Responsibility. Simple, Very Simple leverages a point of intervention located right after a household appliance has entered the waste stream and before it is routed towards recycling. To this end, SVS is acting in collaboration with Danish EPR scheme stakeholders with the objective to channel a portion of WEEE towards preparation for reuse.

Lacy and Rutqvist (2015) distinguish four waste categories: *wasted resources*, *wasted product capacity*, *wasted lifecycles*, and *wasted embedded value*, each type typically occurring in a specific product lifecycle phase, for instance material sourcing or end-of-life disposal. For Martela and SVS, the most relevant waste type tackled is *wasted lifecycle,*

resulting from products not being used as much as they could, or disposed of when they still have use potential. The authors (2015) estimate the value opportunity for business models targeting and eliminating linear economy waste to stand at $4.5 trillion by 2030. Taking workplaces as an example, offices are used 35% to 40% of the time, only including working hours (Ellen MacArthur Foundation & McKinsey Center for Business and Environment, 2015). In Finland, approximately 100,000 tons of furniture end up as waste every year, while it is estimated that between 70-80% of furniture pieces could be recycled (Martela, 2020c).

In general, it is approximated that 78% of discarded products still function properly once replaced (Van Nes, 2003). Product discarding is typically the result of psychological obsolescence, whereby a product is disposed of as a result of changes in users' perceived needs, desire for social status emulation, or new trends (Cooper, 2004). In Denmark, approximately 3,000 large household appliances are discarded every day, accumulating to 1,000,000 appliances per year (SVS, 2020b). These waste types and volumes represent large-scale, society-wide environmental problems that Martela and SVS, through their respective circular business model strategies, are actively addressing. SVS's founder mentions that most individuals replace a home appliance including refrigerator, washer, dryer, dishwasher, oven or cooler, among others, every second year, meaning that the average lifetime of one product stands at 7 years. Yet each piece, he emphasizes, could well last for 30 years.

Whether we can solve this challenge, we don't know. But we are going to try.

4.1.2. The Big Picture of Circular Activity Flows at Martela and Simple, Very Simple

To understand circular strategy *praxis* – the activity streams shaping circular strategy, at Martela and Simple, Very Simple –, it is helpful to map the very journey of products, furniture pieces and household appliances, as facilitated and enabled by the two case organizations through their *slowing* resource loop strategies. A visualization of key stakeholders and activity flows helps to paint the big picture of *circular strategy praxis* at an organizational (Martela) and network (Simple, Very Simple) level from a furniture piece or home appliance's 'perspective'. The following system-maps offer macro views of activity streams for product lifecycle extension and locate key stakeholders of each system. The Martela map is based on information from secondary sources such as company website and Sustainability Reports, complemented by interview insights. The SVS system is constructed from interview insights, which combined help make sense of the larger activity 'puzzle'.

4.1.2.1. *Martela: Slowing Office Furniture Lifecycles through Team Collaboration*

The Martela central internal stakeholders and product flow relationships visualized in Figure 6, form the big picture of *circular strategy praxis* encompassed in the company's '*Lifeycle'* strategy and Workplace as a Service (WaaS) and Learning as a Service (LaaS) models. The first step in this activity chain is assessing a customer organization's overall situation (Figure 6: 1.), including operational context and strategy, workplace as well as individual employee, needs. While it used to be that a customer would purchase "a table, chair and stool", a given quantity of separate pieces, the starting point in this model is a space: what it is envisioned to support in forms of work and with which usage rates. Key questions might be how much office work is done by a few persons at once in common areas, and what is the nature of the work done during the working day, describes Martela's Sustainability Manager.

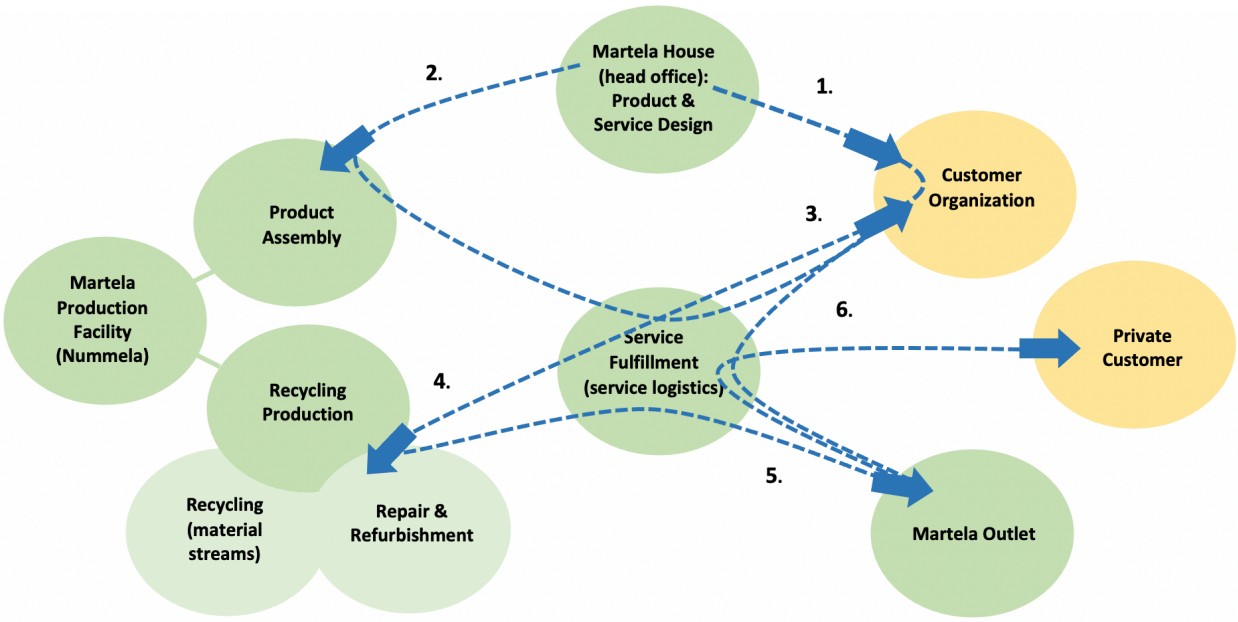

Figure 6. Key Internal Stakeholders & Product Flows of Martela's Workplace as a Service.

In this holistic conception of the working space, the price of a single furniture piece becomes quite unimportant compared to the overall value and price of a workplace solution. This approach thus clearly diverges from the traditional way of planning office premises, where furnishing a space consists in each employee having his/her own pre-defined set,

including desk, chair, and stool; this fixed package simply multiplied by the number of employees. Today, a customer is much more likely to favor a combination of workspaces supporting different forms of knowledge work: spaces for concentration, collaboration and chill-out (Martela, 2018). Insights drawn from an on-site inquiry serve to inform the design of a space and its accompanying furniture set, continuously tailored to the customer's needs. In developing a workplace solution, a customer may choose to include furniture pieces part of its existing premises, new products from Martela's collection, or refurbished Martela furniture pieces. (Martela, 2020b) Furniture pieces no longer used by the customer are, in turn, picked up by Martela for a repair and resale, or recycling, operation (ibid.).

Martela furniture pieces are designed and manufactured in-house, with emphasis on durability and classic, long-lasting design; aspirations that have guided product design since the company's early days. Attention to quality is a guiding practice also because Martela, as a traditionally office furniture manufacturer, has had to consider heavy-duty use in office spaces, incentivizing design for intensive use and slower wearing down. Today, this ethos is also a means to combat "throwaway culture". (Martela, 2020b, p.27) Furniture items are produced based on customer orders, assembled at Martela's production facility (final assembly and used product remanufacturing) in Nummela, near Helsinki (Figure 6: 2.), with components prepared at the firm's two production facilities in Kitee, Finland (laminate and melamine components), and Piaseczno, Poland (upholstered furniture components) (ibid.).

Martela also operates extensive logistics activities fulfilled by its own transportation fleet: from move-in and space transformation, to furniture removals and replacements, to transport to Nummela's remanufacturing facility and from there to Martlet Outlet stores for resale, and to new user spaces. This in-house logistics operation is referred to as Martela's Service Fulfillment business (Martela, 2020c); a nod linking the activity steps that make up the WaaS model. Once a workplace solution has been installed (Figure 6: 3.), its use time begins, a period during which Martela is in close contact with the customer to gather employee feedback on the new work environment, measure usage of premises, and adapt the overarching solution to changing needs and modes of work (Martela, 2020b).

Optimizing a space and included furniture goes hand in hand with extending the useful lives of individual furniture pieces, as it is about ensuring that each piece is the best fit for a particular need and space at a given time. Thus, Martela invests money in the quality and durability of individual furniture items as their ultimate owner – the company sells *services of access* to its products, synthesizes the Group's Sustainability Manager. Hence

Martela has a vested interest in making sure every product is of utmost quality, can be intensively maintained and its use-life extended:

We manage seating*, not* seats.

From a product pricing perspective, Martela's 'Lifecycle' strategy reflects distinct thinking and questions. The "defining question", the informant explains, is not how much product 'x' costs upon purchase by a customer, but how should a chair's pricing encompass its ability to as efficiently as possible fulfill the need of repeated seating along a long time period and multiple users. As such, pricing has to factor in an extended use-life.

For a customer organization, Martela's solution offers important benefits. It allows implementing changes flexibly and saving money by paying a monthly fee for any furniture set used within a time period (Martela, 2020b). With all practicalities taken care of by Martela, there is no need to arrange for individual furniture pieces' order, replacement, disposal, removal or transportation. An efficient use of space in work and learning environments can also help reduce energy consumption (Martela, 2020b, p.27). Martela's interviewed CEO explains that when spaces are designed for particular needs and within defined square meter parameters, they can be heated, cooled, and lit based on need. Martela's approach to the circular economy, he adds, is two-fold: first, it is thinking and experimenting what it means to Martela's own operations, and second, exploring how circularity can be supported in customer organizations *via* Martela's workplace offer.

Throughout their use times at a customer site, furniture pieces are maintained; office chair gas springs replaced, upholstery cleaned, worn parts repaired (Martela 2020h). Workplace needs may change at various points of the customer relationship – it might be that a customer may have more need for shared spaces including sofas and meeting room furniture instead of individual workstations, prompting disposal of no longer used pieces. Once pieces are no longer needed, they are collected and brought to Martela's remanufacturing facility in Nummela (Figure 6: 4.), where based on an assessment of their condition they may be either cleaned, refurbished or upholstered for resale, or recycled into separate materials streams such as wood and metals, the rest used for energy production. Items prepared for reuse are sold to both corporate and private customers through the Martela Outlet webstore and three brick-and-mortar stores in Vantaa, Turku and Tampere (Figure 6: 5. and 6.). In 2019, close to 20,000 furniture pieces found a new user via the Martela Outlet channel. (Martela, 2020b)

Martela's Workplace as a Service model is a prime example of a product-service system (PSS), whereby a company customer shifts from buying and owning individual furniture pieces, to buying the service of an insightfully and continuously customized 'workplace' environment, thus a result-oriented PSS (Cook et al., 2006). The created value for customers is manifold, encompassing services and schemes that make existing products last longer, extend their function (upgrading, maintenance and refurbishment), and make the product and its materials still useful at the end of their – first – lifecycle. For Martela, a WaaS means high degree of responsibility for products' entire lifecycle, early involvement of customers in the design of the PSS, and managing internal logistics to support this value creation through products' both extended and repeated, lifecycles. (Mont, 2002) Collaboration with customers is central to Martela's 'Lifecyle' strategy and WaaS model – a PSS can strengthen a company's customer relationships through close and continuous contact, and information flow (ibid.).

4.1.2.2. *Simple, Very Simple: The Bridge to Consumer-Users in a Supply Chain for Reuse*

As Figure 7 illustrates, when a consumer residing in Copenhagen decides to replace his/her washing machine with a new one, he/she has at least five options for the old machine. Assuming that repairing the machine is not deemed attractive from a cost-benefit or other viewpoint, one can choose to a) store this machine at home, just in case or until deciding on another action ("Keep"); b) sell it on a website where citizens can buy and sell various types of used products to and from one another ("User-to-User Transaction") – a direct but unofficial, for unregulated, route to machine reuse; or c) bring the machine to a home appliance retail store or call the latter to pick up the machine ("Retailer"). If this third avenue is opted for, provided this particular retailer has an agreement with Recirk, the refurbishment operator supplying SVS with some repaired machines for resale, the machine has a chance to be prepared for reuse and find a new consumer-user via SVS's sales effort (Figure 7: 7.).

Alternatively, a user might d) go the extra mile, literally, and transport the old machine to one of City of Copenhagen's designated Recycling Centers (Figure 7: 1.) that specifically accept washing machines among other WEEE: the official route to reuse. But it could be that the consumer-user does not have the means to transport the machine to the nearest Recycling Center, or little motivation to do so, in which case he/she might simply e) leave the machine at his/her building or neighborhood waste sorting station, the "backyard disposal". If this latter option is chosen, the machine will be collected among other waste

streams (such as plastics, cardboard, mixed waste, etc.) by the municipality's waste collection company and driven to a large sorting station. At these large sorting stations, due to sizeable volumes and varieties of waste handled within limited space, it is at present difficult to arrange for individual products such as washing machines to be collected by Recirk for refurbishment. In this case, the machine is likely to be dismantled into parts directed at recycling and/or incineration.

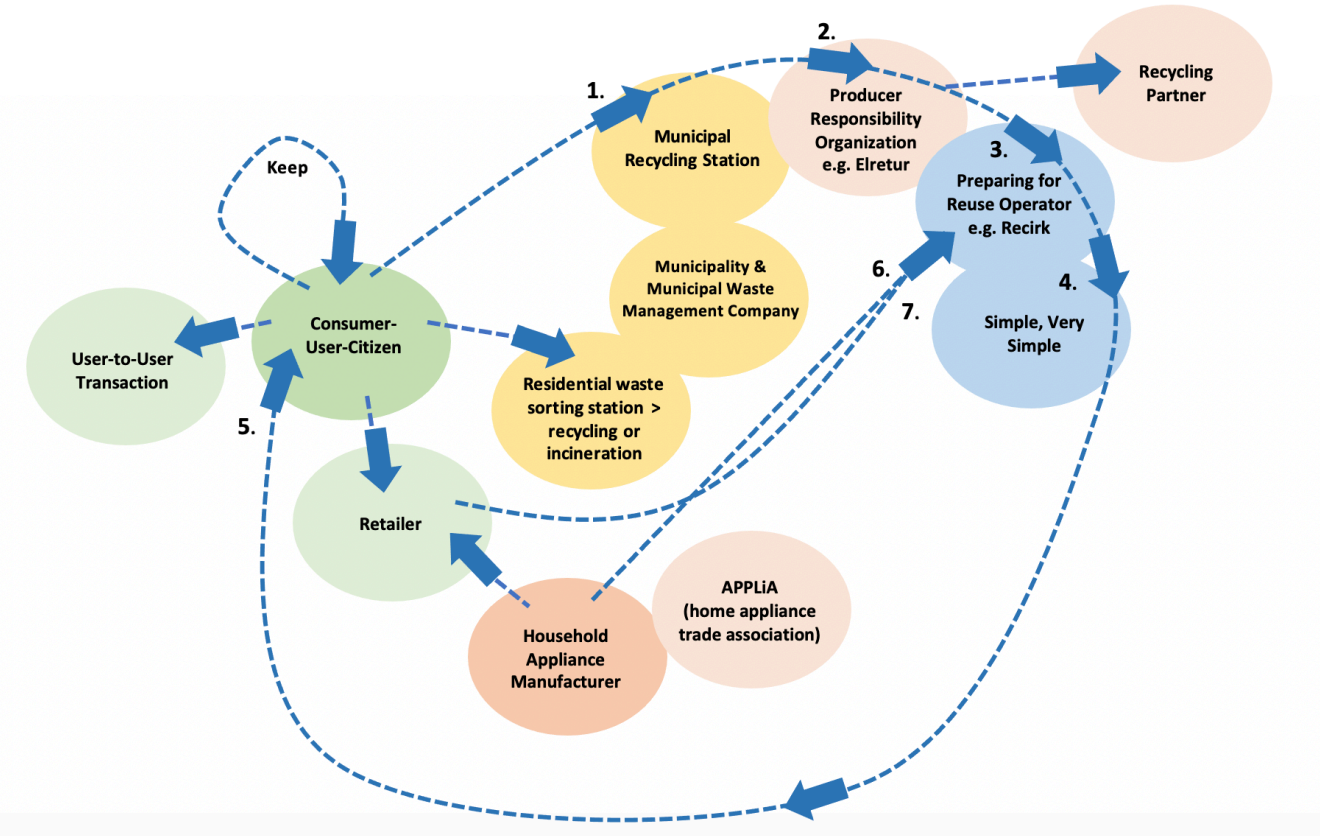

Figure 7. Key Stakeholders & Product Flows of the WEEE Reuse Network around Simple, Very Simple.

The municipal Recycling Centers are rather well-known in Denmark, as they collect most waste fractions from households, and almost all if not all, WEEE. It is thus likely that our hypothetical citizen-consumer is aware of the closest Recycling Center. Assuming it is located at a reasonable distance, he/she will drive to the Center and once on site, an employee will show where to leave the machine. At this point, once dropped off, the consumer-user has officially made this machine a *waste* product. At that moment enters Extended Producer Responsibility: the machine's manufacturer or importer to Denmark is now responsible for its recycling and associated costs. Elretur is Denmark's largest Producer Responsibility

Organization (PRO) or "collective scheme". As member, an electrical and electronic equipment (EEE) producer or importer pays Elretur a price based on the volume of goods this producer sells on the Danish market, to collect and safely recycle the WEEE of that brand in given municipalities such as the City of Copenhagen.

Elretur is the largest of a small number of PROs in Denmark, holding an approximately 80% share of all EEE producer/importer companies in Denmark as its members. Once a year, the Danish Authorities determine WEEE amounts to be collected by PROs or producers themselves, based on volumes of EEE sold by these producers in the previous year. Such distribution currently (at the time of this study) means that Elretur is responsible for collecting household appliance WEEE at all relevant Recycling Centers in the City of Copenhagen. The municipality is legally obligated to provide space for WEEE at municipally managed Recycling Centers, while Elretur is responsible for providing equipment to collect the WEEE. In our example scenario, the City of Copenhagen has now done its share of the process – collecting waste that has entered the municipal waste stream and pointing the citizen-consumer at the Recycling Center to the WEEE disposal area. Elretur is now in charge (Figure 7: 2.), responsible for the collection and safe treatment of the machine – its *owner*. One of two streams may be opted for at this point: most WEEE is presently delivered to Elretur's recycling operator partner, which takes care of dismantling machines into different material streams used to manufacture new products.

Yet Elretur, in an effort to encourage more household appliances to be prepared for reuse where possible, has a joint collaboration agreement with both the City of Copenhagen and refurbishment operator, Recirk. This agreement allows Recirk to access the Recycling Station's WEEE drop-off area. Recirk employees can make a trip to the Recycling Station on a given day and see what machines lie there at that moment after having been dropped off by a citizen and before their pick-up to recycling. If a machine is deemed of a condition or economic value fit for refurbishment, Recirk is permitted to collect it and bring it to its remanufacturing facility for a 'preparation for reuse' makeover (Figure 7: 3.). The remanufactured machine can now be sold to a new user (Figure 7: 5.), at which point enters Simple, Very Simple (Figure 7: 4.). SVS, as sales and marketing channel, enacts the ultimate link between the steps of this chain as experienced by the machine, and a new user. The machine can begin its second lifetime.

In this system, a home appliance's path to reuse represents a market dependent on, yet distinct from that built around Extended Producer Responsibility. The route to reuse represents a separate market trajectory, *diversion* from the established route to recycling,

beginning in the collaboration between a municipality, Elretur, and a refurbishment operator, to gran new access rights to WEEE. This path diversion enables a *cycle*. Elretur can be regarded as a 'lead organization' of the network in facilitating activities of partner organizations in their efforts to reach both their own, and network, goals (Provan & Kenis, 2008) such as reuse, through giving Recirk access to the collected WEEE. The municipality is also an essential building block contributing infrastructure and people capabilities for the collection and handling of WEEE. Yet a newly created cycle begins and ends with the consumer. A citizen chooses what to do with an old machine and how to handle it at the Recycling Center's WEEE drop-off point. As noted by the Elretur informant, if a washing machine is negligently thrown onto the designated zone, it is unlikely to be fit for reuse, compared to if it is carefully lifted and placed where instructed. Ultimately, a consumer can choose to opt for a reuse, instead of brand new, machine. Thus, the consumer provides the input or stock (Wells & Seitz, 2005), to this emergent *supply chain for reuse* and is the very actor closing the cycle in buying a reuse home appliance.

At SVS, *circular strategy praxis* unfolds through partnerships and exchanges. The system can be seen as a value network characterized by relationships of high co-dependence between actors, each fulfilling a specific role within a larger, established EPR, and emergent reuse, WEEE market. A value network is defined as "any set of roles and interactions in which people engage in both tangible and intangible exchanges to achieve economic or social good." (Allee, 2008, p.6) Actors, be they individuals, groups or organizational entities, assume specific *roles* and engage in *transactions* that originate with one participant and end with another, generating the movement of particular *deliverables* that carry value (Allee, 2008). Participants "utilize their tangible and intangible asset base by assuming or creating roles that convert those assets into more negotiable forms of value that can be delivered to other roles through execution of a transaction. In turn, the value of deliverables received is realized by participants when their convert them into gains or improvements in tangible or intangible assets." (ibid., p.9-10) In the value network supporting SVS, transactions (Figure 7) take the form of agreements that yield tangible deliverables such as WEEE product and materials flows, and intangible ones including permissions of access, information, fees, shared responsibility expressed in double barcodes, human knowledge and know-how around preparing for reuse, and brand value. Although not visualized in Figure 7, deliverables flow reciprocally between system actors.

4.1.3. Zooming into Everyday Praxis: Decisions and Actions towards Circularity

4.1.3.1. *To Repair or Not to Repair – That, is a Central Question*

The question of which product to repair or refurbish lies at the heart of the two circular activity streams visualized above. It is particularly salient at Martela once furniture pieces no longer needed by a customer company are removed from office premises and brought to Martela's Nummela production facility, where they may either be refurbished or upholstered for resale at Martela Outlet, or recycled for parts recovery. In relation to Simple, Very Simple, the question is posed when supplier, Recirk, makes a trip to a designated municipal Recycling Center to examine collected WEEE products and pick high-potential ones for repair. Determining what to make of individual products and whether or not to reroute them towards reuse, is a case-by-case process guided by the evaluation of particular parameters, insight from previous product cases and decisions, and keeping sight of the broader objective, to simplify the complexity underpinning new ways of thinking and doing for the "circular economy". These actions are core to the day-to-day work of circular strategy practitioners at Martela, SVS and partner organizations, and are next 'zoomed on' to understand the work of product lifetime extension in practice.

4.1.3.2. *Determining Product Pathways One Item at a Time: The Cost-Benefits of Circularity*

What to make of collected furniture and household appliance pieces is an exercise in individual judgement, where product traits, cost of refurbishment, and consumer demand for a reuse product, play critical roles. The question, in a nutshell, is: *Does the production (repair, upholstering or refurbishment) cost and chargeable sales price based on anticipated consumer demand, justify a "repair route" for this item?* This is a dilemma in the context of circular economy strategy where there is no defined blueprint or instruction sheet as to how to navigate diverse pieces' suitability for reuse. Martela, SVS and partners are reinventing a decision-making *wheel*. As observed by a manager working at the Martela Recycling Production, deciding whether to reuse or recycle, is "not black or white". He describes the difficulty of assessing the quality of a recovered furniture piece and determining whether to refurbish it or resell it as such. With no defined guidelines framing single unit judgement, tapping into one's tacit knowledge of past product cases and exchanging perspectives with colleagues, are key. As Chia and Holt (2006, p.647) describe, "agents, as *relationally constituted* entities, draw mindlessly from the past to deal with the novel present."

At Martela, every recovered product is distinct in terms of use time and condition once it returns to the company's Recycling Production unit for handling. Recovered furniture items stem from a wide range of product lines, designs and years of production; some designs no longer produced or sold new. In this situation, one has to make use of technical product understanding, draw connections to other similar encountered pieces, business reasoning and aesthetic intuition as to a furniture piece's worth to consumer taste. At SVS and Recirk, the decision of what to make of a washing machine also relies on product knowledge; experience as to which washing machines have been observed to perform consistently well over time and what have been identified as recurring flaws with other machines. This task is complicated in that washing machines, too, are unique in experienced use time, brand, model, features, and conditions. The cost and effort of repair relative to the chargeable price and sustainability benefit, is a 'non-linear' judgement call and balancing act.

a) Inventory Management Factors: Volume, Space & Time

Product and spare parts quantity, available space, and timing, are factors that determine product circulation at both Martela and in SVS's stakeholder network. The Martela Recycling Production Manager explains that the decision of whether or not to repair a furniture item, greatly depends on the quantity received at one time. "Does preparing for reuse make sense for one chair of this kind? How about for 10 of them gotten all at once?", are questions he and his team regularly ponder. Product quantity is closely intertwined with time of reception, as the contents of the next day's furniture take-back shipment are uncertain. If one chair of a given design is received today, and tomorrow's load brings an additional three units, perhaps placing aside this one chair today makes sense. Evaluating a product's attractiveness also is ambiguous: it might be that a furniture piece does not look remarkable today but that it will be subject to customer demand for its retro look and decades-spanning use time, tomorrow.

The space available for furniture item storage is also a decisive criterion, Martela's Recycling Production informant describes. When available storage space is limited and a constant circulation of products must be ensured, decisions need to be taken promptly yet with thorough evaluation as to the optimal next step for every single unit. This is complicated for many items will only pass via storage once; they will either continue towards recycling or if refurbished and resold at the Outlet store, the aim is to endow them with a long second use-life. The interviewed manager coordinates this product flow. He has no quantity targets

– the objective is to coordinate product circulation and *circularity* through preparing for reuse where possible. Ensuring high-volume circulation within tight schedules, based on product delivery times, frequencies and needs at Martela Outlet, rhythms the working day.

Space, quantity, and time, are also salient factors shaping product flow within a new supply chain for WEEE reuse, built by SVS and partners. Space constraints, for example, hinder a household appliance's prospects for repair in situations where an item ends up at a municipal waste sorting station instead of being brought to an assigned municipal Recycling Center by a consumer. The location of WEEE drop-off is critical here, for as a City of Copenhagen Project Manager working on circular economy strategic initiatives explains, regular municipal waste sorting stations handle sizeable volumes of diverse waste streams within tight space constraints and with dense truck load traffic, which thwart the possibility to place aside and separately deal with WEEE. New space organization of these waste sorting stations is currently worked on by the City to tackle this issue. Timing is also decisive for Recirk's trips to Recycling Centers accepting WEEE, to gauge the pool of machines in transit. According to SVS's founder-CEO, the trip is made 2-3 times in a week. An issue, however, is that there are relatively few Recycling Centers to check, and not making it "on time" means arriving in front of an already emptied WEEE container. "We go often but don't catch all the discarded white goods", he says. Time is closely connected to volume – picking up enough machines at once is important from a cost-benefit perspective, as driving to the Recycling Center takes time. Thus, it matters whether 2 or 10 machines are collected on one single trip, an interviewed Municipality of Aalborg Project Leader further emphasizes.

Acquiring enough machines is a key challenge for SVS, explains the founder-CEO:

> *When selling used products, I don't have a million units, it's hard to get a lot of units. And secondly, they're all different. Every unit is close to unique, products cover 10 to 5 years of product history from all brands. So, I have a very heterogeneous portfolio.*

Limited machine unit volume is tied not only to the timing of Recycling Center excursions, but also to the still small number of suppliers, including City of Copenhagen Recycling Centers and a household appliance retailer partner recovering appliances directly from consumers. This supply hiccup is compounded by the existence of an illegitimate yet sizeable 'grey market', which is noted as a major roadblock in the development of a reuse market for household appliances by SVS and partner organization interviewees. It is estimated that approximately 40% of WEEE is recovered and 60% collected by grey market actors for export abroad. Since in competition with a grey market acquiring the lion's share

of WEEE, SVS has to establish enough legitimate white goods supply channels to make the operation economically viable. The number of spare parts available for machines deemed worthwhile to repair, also matters. Spare parts, indeed, are very expensive and hard to procure in large quantities, meaning their use has to be planned and parsimonious. Trips to Recycling Centers sometimes don't yield many machines to refurbish as a whole, but help obtain pieces that can be broken down into parts for use in another machine's remanufacturing by Recirk, the Elretur informant notes.

b) Consumer Perception Factors: Design, Price & Trust

The chief criterion as to whether to refurbish a product for resale relates to whether it is expected to find a new user. The condition and materials of a recovered furniture piece or household appliance upon recovery, are salient factors. Carefully examining an item helps evaluate whether the degree of marks of use or scratches favor resale. "With this type of scratch, can I resell this?", is an everyday question for Martela's Recycling Production manager and his team. However, scratches are not self-explanatory to examine when deciding what to make of a product, and so exchanging views with colleagues, as with Martela's Product Quality team members, helps to make a quick decision about an individual unit. One's own judgement capability and "eye" for the types of product conditions justifying repair, strengthen over time. This expertise also develops with insight into which products sell at Martela's Outlet stores. The Recycling Production manager encourages his team members to forge confidence and courage in their own decisions. Every product case serves as a decision-making precedent to handle the next piece, and one's product assessment know-how grows sharper and quicker over time.

At SVS and Recirk, deep product knowledge is similarly built through inspecting and deciding whether or not to remanufacture WEEE pieces. With each treated machine, one learns to see which types of flaws are cost-efficient to fix relative to a machine make's overall estimated product durability, and which issues do not make economic sense to tackle. At SVS, a pivotal question is how much a refurbishment operation costs relative to how much can be charged for the repaired machine. Indeed, if repair was a cost-effective endeavor, more consumer-users might opt to have their broken or flawed washing machine repaired, instead of opting for the equipment's full replacement. SVS's founder-CEO gives the example of a fridge, with which a frequent issue is the breaking of a plastic shelf, potentially causing further technical issues. Simply replacing the shelf is costly ("500 Danish kroner per new plastic shelf", based on the informant's own

such experience), let alone having someone come and install it. A customer will call a repair service company and be charged a fixed cost of a professional driving to and back from one's home to simply identify the issue. Repair, then, entails an additional variable cost based on the problem type.

Hence repair, at the moment, is deeply unattractive and costly, and "doing the wrong [from an environmental viewpoint] doesn't become a difficult choice", summarizes SVS's founder. As the Expert Circular Economy & Sustainability, BSH Group, further stresses: a customer will typically prefer to invest a few hundred euros extra to buy a brand new good-quality machine, thereby forego the effort and cost of repairing an old machine. Due to this entrenched cost-benefit reasoning, most machines ending up in the waste stream, including Bosch-Siemens machine brands, actually don't have serious flaws – issues are often small and trivial, including for instance an unclean filter. A machine's unclean filter is indeed highlighted as the main reason for contacting a repair professional or considering a machine to be broken as also highlighted in a recent article in Finnish national newspaper, Helsingin Sanomat (Tiainen, 2020, September 6).

Setting a price to a remanufactured home appliance is challenging in the face of predominantly strong consumer bias towards new and expectation to pay significantly less for a reuse product. Varying quality perceptions of diverse machine brands dictate the maximum chargeable price that can be set for any one repaired piece. At SVS, the chargeable price for a reuse machine is estimated at around half of the price of a new machine. Thus, when choosing a machine to repair, the question is whether selling it once refurbished at a price equivalent to half its brand-new sales price, makes economic sense. What in SVS's founder's view is ironic, is that the cost of repair for a lower-tier machine is more or less the same as for an upper-tier brand. Yet consumer willingness to pay differs markedly between the two products, which has to be taken into account by a business which revenue stems from sales of reuse products. Thus, the mission is to establish consumer trust in a repaired appliance. This is supported by providing a warranty. A warranty is indeed crucial for consumer-users' perception of security with a reuse product, as highlighted by all SVS-connected interviewees. A warranty not only is an element which SVS has to deliver, but also a competitive advantage of operating in a legal and legitimate market for WEEE reuse.

In essence, the question of whether or not to repair, often means considering one's own answer to the question of "Would I buy this?", reflects the Martela Recycling Production manager. At the Martela Outlet, a challenge is convincing a customer that reuse

furniture items are clean and in an excellent condition. The interviewed Martela Outlet Sales Negotiator observes that customers often have preconceived ideas of reuse products; that they by default have to be somewhat defective or in a sub-prime state. Gazing around at the furniture displayed at the Martela Outlet in Vantaa, the pieces really look *as new*. Still, seeing the pieces up close can help change a consumer-user's mindset about the expected quality of a reuse piece. A showroom to display repaired washing machines, for now sold on SVS's website, is also planned by the company, as that might help reassure a new user of a machine's fitness for a second lifetime. "How used does a washer look?" A look and touch at the machine can help confirm – *nice and clean*.

c) Keeping Sight of the Big Picture, and Shaping It

Making decisions about single furniture and household appliance units is helped by understanding where and how one is acting as part of a wider activity chain. Placing oneself within the broader context gives perspective on how one's role relates to that of colleagues, perhaps relieving some of the pressure that comes with repeated decision-making. The Martela Recycling Production informant describes his role as that of a "storage steward": he knows what products are in transit in storage space and what is their value at any one time. His role is to manage products' circulation, although he emphasizes that for recycled pieces, the right type and pace of circulation are complex to determine. Ultimately, he sees his role as to make sure that products don't linger in storage for very long and are smoothly directed to either recycling or resale at Martela Outlet. For this self-described "storage steward", collaboration with members of Sales, Product Assembly, and Service Fulfillment, teams, is a cornerstone of day-to-day coordination of storage flow and inventory turnover for Martela Outlet sales channels. Collaboration generates new solutions, ways of doing, and opportunities for dealing with dilemmas and making the best use of every product, the Martela Outlet informant observes. The key, he contemplates, is to cultivate an open mind.

Grasping the 'big picture' of what one is doing is an aspect that according to the Martela Recycling Production informant, could be further enhanced. Better insight into the procurement of used furniture pieces – the step preceding his sorting and storage responsibilities – would shed light on who has paid for the collection of used pieces, Martela or the customer organization, which could help inform decisions related to items' next steps. Understanding how different pieces of the Martela organizational 'puzzle' connect to one another, might reveal ways to handle activities as "smartly" as possible, the informant

observes. A better view of the processes, micro-processes, and work roles that make up the Martela 'Lifecycle' strategy, would be insightful. While this *circular strategy practitioner*'s role description has not substantially changed over the years, the meaning of the role's content has deepened and so has understanding of the work's connection to that of colleagues in other teams. Focusing on the 'big picture' of one's role keeps the larger purpose at sight:

Someone's Trash; someone else's treasure. That's our day-to-day work.

The wider work context also relates to the regulatory landscape in which a market for reuse is developed. As Antikainen and Valkokari's framework (2016) visualizes (Figure 1 in the Literature Review), the institutional environment is significant with regards to circular business model innovation. The Municipality of Aalborg Project Leader has played an influential entrepreneurial role towards establishing a standardized 'big picture' for a WEEE reuse market. The informant has worked on the development of a European standard for WEEE refurbishment: CENELEC EN 50614. CENELEC, the European Committee for Electrotechnical Standardization, is responsible for standardization in the electrotechnical field. The Committee prepares voluntary standards to help facilitate trade between countries, create new markets, cut compliance costs and support a Single European Market. (CENELEC, 2020) The new EN 50614 standard contains protocols to ensure WEEE products are repaired and refurbished in a safe way, and the process of what has been done to a single product, appropriately documented. It specifies how to go about *reuse* specifically, thus a key addition to an already established CENELEC EN 50625 standard focused on WEEE treatment *in general*.

The process leading up to the new standard was a two-year collaborative journey that entailed bringing multiple national and international stakeholders around the same table, including Producer Responsibility Organizations such as Elretur, the Danish Producer Responsibility System, the Environmental Protection Agency, Danish Industry Association, Danish Chamber of Commerce, Denmark's three largest municipalities, and APPLiA, the European home appliance industry trade association representing home appliance manufacturers. Later, Recirk and another preparing for reuse operator joined the process. The Project Leader describes the larger purpose guiding the discussions: "We are going to work with reuse and set it up in such way that we can address that products are refurbished in a proper way, along a CENELEC standard." The product of this proactive, collaborative

effort, a reuse-specific standard, is a milestone in the development of the WEEE repair market; it makes it certified and controlled, institutionally separate from the grey market.

A controlled market is indeed a prerequisite, for it endows a refurbishment operator such as Recirk with a legitimate work mandate to repair home appliances. The standard, supported by household appliance manufacturers, also makes it possible and required to sell refurbished products with full consumer protection and warranty, and with the reuse operator's barcode added onto a refurbished unit – the product re-registered as a trustworthy, standardized reuse piece. Elretur has responsibility and interest in ensuring that the market for reuse appliances is well organized, with good products returning on the market and users obtaining a quality experience, including the same product warranties as with new products. The aim is to set up legitimate structures to avoid a "Wild West of Reuse", the Elretur informant emphasizes. With a standardized playing field set up, the next step, the Municipality of Aalborg Project Leader explains, is to devise a process for reuse operators to be certified by the new standard, to obtain an official "stamp" on their activities as following the standard.

Supportive standards, regulations, and legislation are essential for an economically viable reuse market. As stated by an APPLiA Position Paper (2018, January 24, p.1), "[m]arket surveillance must have the sufficient means to ensure fair competition and guarantee a high degree of legal certainty and level playing field for all actors." The importance of policy frameworks and regulations for a WEEE reuse market is highlighted by all SVS-connected informants. In a business and policy practitioner survey conducted by Kirchherr et al. (2018) to identify the most pressing barriers to a CE transition in the EU, regulatory barriers are not cited among the top five concerns. Yet the findings of this study indicate that the importance of one transition roadblock relative to another depends on industry, and whether the CE aim relates to reuse, or recycling. The authors' survey results suggest (p.269) that "the most pressing CE regulatory barriers might have already been removed" in the EU as per the European Commission's special focus on CE since 2015. However, developing and navigating the regulatory terrain with respect to *reuse*, which as noted is not yet subject to defined quantitative targets across product categories in the EU, remains a central endeavor shaping circular strategy enactment for WEEE. Every new supportive standard is a milestone. Says the Municipality of Aalborg bridge-maker:

It's like you have been running with a stick and it has now been passed to those actors with the responsibility to act with it. The direction is set now.

d) Painting the Big Picture of the Product Portfolio

Acts of orchestrating, composing and selling a portfolio of refurbished products play an important role in everyday *circular strategy praxis* at Martela and SVS. At Martela Outlet, upholstered and refurbished furniture pieces are meant to flow through and sell within short time-periods. With uncertainty as to units' designs and numbers received for sale on a given day, one has to focus on what is in store *today*, explains the Martela Outlet Sales Negotiator:

> *With refurbished furniture, there is no readily available product collection catalog like for new pieces, to see which design options would best respond to a customer's needs. We have to search from amongst the pieces we have at that moment and find those that best fit a customer's needs. Customers adjust to what we have available; the starting point of what they are looking for is flexible.*

The 'big picture' when it comes to product portfolio, is characterized by varying quantities and display times of specific products. There is no 'permanent collection' for reuse products. Thus, collaboration with colleagues, for example Service Fulfillment, which team performs furniture recoveries from, and shipments to new, customers, and with Nummela Recycling Production, are in a key to coordinating daily product flows and obtaining information as to the day's product inventory to organize, display, and sell.

At SVS, the founder-CEO explains that with great heterogeneity of refurbished washing machines in terms of brand, design, manufacturing year, and condition, his solution has been to homogenize the inventory pool into three categories based on product design and technical quality criteria. SVS sells machines in the premium, standard, and economy categories. The aim of this three-tiered homogenization is not only to simplify the product portfolio on SVS's end, but also nudge consumer-users to see household appliances for their capability to service a performance – washing clothes and dishes, keeping food fresh or baking a cake – rather than differentiate washers in terms of brand and degree of *newness*:

> *Ultimately, a washer is a washer is a washer. And as a consumer, do you* really *care about the brand of your washing machine?*

The CEO recounts that these three product categories emerged from assessing the heterogeneous household appliance portfolio he and colleagues had recovered for reuse, and understanding that at least in the EU market, machines could be classified into three broad quality classes. Energy consumption is also considered, with machine design and energy labeling key classification parameters. Homogenizing the product pool, the "work stream", the founder describes, is an essential process of *circular strategy praxis* at SVS. This

approach allows the company to also repair and resell slightly lower brand quality machines. This ability to take on and handle lower brand quality machines, yet treating them with the same refurbishment operation quality and cost as the higher-grade machines, also serves to expand product stream volume towards economies of scale:

If we can take a lot of volume, we can enjoy economies of scale and liberate ourselves from the original sales price, so we can sell more efficiently. We are trying to overcome the distinct traits of each machine, as each machine is quite different.

Selling a diverse pool of washing machines within three categories also necessitates a change of perceptions on behalf of customer-users, as they have to be willing to embrace and pay for the 'big picture' of "a washer is a washer is a washer". This effort is a core part of SVS's circular strategy enactment. As the founder describes, the aim is to demonstrate to potential users that repaired machines are as good and even better, than new, as they have been refurbished in light of deep understanding of the machine make and design, technical issues, and with the objective to significantly extend the piece's performance and use-life:

Just like with music listening, around 10% of people are buying record players and the rest using streaming services. We want the same switch for white goods: 10% of people to buy the new stuff and 90% to do with existing, continuously maintained and repaired, machines.

To attain this 90% goal, cheaper machines also need to be fixed, pursues SVS's founder. Yet repairing lower-tier machines is only economically worthwhile if consumer perceptions change towards readiness to pay at least half of the cost of repair also for these machines.

A circular economy 'big picture' denotes the broader purpose and context of one's everyday doings. In that regard, while individual product decision counts, it is their repetition, consistency, and combination that shape and consolidate new resource flows such as the particular activity chains contributing to product lifetime extension. This process, including the sum of the activities highlighted here, is in flux and evolving – what made sense to dismantle and recycle yesterday, might make better business sense to refurbish and resell today. We now 'zoom out' to examine some of the overarching *practices* that *circular strategy practitioners* at Martela, SVS and partner stakeholders, engage in and draw upon at meso and macro, organizational and network, levels.

4.2. Circular Strategy Practices

4.2.1. Dialogue & Information-Sharing

4.2.1.1. *With Colleagues*

Practices, according to Orlikowski (2002), are engaged in by individuals as part of the ongoing structuring processes via which institutions and organizations are produced and reproduced. Practices are both individual, performed by actors in everyday action, and institutional, shaping and shaped by organizational norms and structures. Since coordinating product flow from customers to Martela's Recycling Production unit, to Martela Outlet and on to a new customer, demands activity coordination across organizational teams, close interaction with colleagues is an essential daily practice. The Martela Recycling Production Manager underscores the role of "constant interaction" as central to his workdays to ensure individual furniture pieces are directed to "the right address" as promptly as possible.

The manager often reaches out to colleagues in other company units with questions touching on their specific expertise. For queries about materials, he asks Product Assembly team colleagues – it helps that the team is located in the same warehouse complex as his. He himself is solicited by colleagues from, for instance, Product Quality, with inquiries such as can a product with a particular defect or flaw be sold at Martela Outlet. The role of colleague-to-colleague information-exchange and dialogue hence not only is to confirm and expand one's own decisions, guesses and knowledge, but also broaden perspectives across the organization. Learning to gaze at a, say, slightly scratched but otherwise functional electric standing desk, as a product of high embedded value fit for resale, instead of as a product with metal legs to recycle, is a gradual phenomenon of "frame-breaking", cognitive shift (Halme, 2002, p.1095), also for teams not directly dealing with recovered furniture pieces.

Dialogue and perspective-sharing within the team is similarly key. The Recycling Production Manager explains that a team-meeting is held once a week to discuss product cases, successes and challenges. In these meetings, he describes, team members reflect together as to how something may be done smarter and look for "repetitions"; recurring insights related to product issues or repair solutions. In these sessions team members ponder cases together and bounce views: "We think about it together." For example, there have been situations where Martela's Sales team has requested a particular furniture component, but this latter was not available, for not placed aside. Such cases help inform different decisions in future instances: to place aside the said components, for later reuse.

Circular strategy praxis takes shape through this product case-by-case sorting and action repetitions – a "pattern in a stream of actions" (Mintzberg & Waters, 1985, p.257) within and towards which information-sharing with colleagues forms a bedrock practice. Circular strategy, thus, emerges via a series of deliberate but also evolving actions. Indeed, even where a decision for a product is taken consciously and according to one's own evaluation of key factors, as earlier discussed, new information, peer insights and customer demands may favor different decisions next time, faced with a similar product dilemma. Without a predefined plan and intention as to which products to recycle and which to repair, *circular strategy praxis* predominantly unfolds "through everyday practical coping actions" (Chia & Holt, 2006, p.637), based on the information at hand and one's cognitive 'product case precedents database' to draw upon each new day. This knowledge is constituted in ongoing and situated everyday actions, which Orlikowski (2002, p.269) calls *knowing*, for constituted and reconstituted every day in practice. Information-sharing in the context of circular strategy enactment, thus, encompasses *knowing* to learn from others, learning by doing as well as learning and unlearning assumptions (Halme, 2002) about products and parts fit for reuse, and cooperating and navigating new situations (Orlikowski, 2002). *Knowing* lives in time. The Martela Recycling Production Manager contemplates:

Factory work can often be very repetitive, but in my team's case, it lives quite a lot.

4.2.1.2. *With Customer-Users*

Dialogue with, and listening to, customers, is another key practice of circular strategy enactment. Customer interaction is important to address engrained assumptions towards reuse items such as a washing machine or office chair. From a marketing perspective, building consumer-user *trust* in products is a priority. SVS's founder-CEO explains that since the company currently does not have a physical store to exhibit refurbished machines, consumers often request detailed information about the refurbished machines. However, sharing product specifications and sending photos of individual and unique pieces, is time-consuming. There thus is a tension between striving at openness and transparency about refurbished pieces, yet at the same time making do of limited resources in an attempt to be competitive as a business. Navigating this paradox as a young company in an emergent market, is challenging, but also encourages experimentation and iteration in marketing activities. The aim is to persuade a consumer that SVS and Recirk are experts in household

appliance remanufacturing, and that every sold piece is performant and durable regardless of product price tier. In comparison, SVS's CEO remarks that with rental cars, people often are ready to pay a high-price without knowing the singular characteristics of the car they are getting – usually not the exact same piece as on the promotional picture.

Speaking with consumer-users and addressing questions and concerns is an exercise in facilitating user mindset change, also a locus of "frame-breaking" (Halme, 2002, p.1095): from regarding reuse products as inherently unreliable and limited, to viewing them as valuable one-of-a-kind pieces that precisely thanks to their high-quality complemented with professional preparation for reuse, can fulfill their function far in time. Communicating SVS on Instagram is one way for the company to work on user perceptions through images and storytelling. Another endeavor is building a new web shop that inspires "coolness" and simplicity of the act of purchase, challenging expectations about the purchasing experience of reuse. Interestingly, the Municipality of Aalborg Project Leader also mentions the consumer mindset shift that has occurred in the automobile industry. It used to be that a car repaired by an independent mechanic was "the worst thing you could buy", but nowadays car manufacturers are mandated to provide detailed repair manuals and spare parts with every sold unit, which contributes to changing perceptions around professionally repaired cars. Trust in repaired cars has already risen: "Today, we say 'I've bought a car!', not 'I've bought a reuse car!'." That same shift is aimed at with home appliances: the goal is a white goods market with no clear distinction between new and reuse, easy access to repaired products, traceability of products recovered by manufacturers and sold to refurbishing professionals, adds the CENELEC standard-developer.

At the Martela head office, the interviewed Sustainability Manager describes a tension between the company's WaaS approach to circular economy and customers' idea thereof. A client will typically see the 'circular economy question' as about a single product's lifecycle impacts, whereas Martela focuses on an entire workplace's lifecycle and services to ensure a continuously optimized space. The scope, thus, is the *space* and its *overall* lifecycle. These divergent conceptions represent a form of "cultural challenge" – to transition from product-specific environmental considerations, to space-oriented ones. Daily interaction with customers is core to the interviewed Martela Outlet store sales professional's workdays; the brick-and-mortar store an important place of user contact. Customer demands greatly vary based on industry of operation and different expectations or requirements related to workplace furniture pieces. Someone may be keen on knowing a product's constitutive materials, whereas another will be more concerned about its carbon footprint.

Answering varying customer requests helps forge one's touch on changing user expectations. Since not all questions can be directed at one employee, the Sustainability Manager at Martela House frequently solicited in such matters, Martela sales professionals of both new and reuse products increasingly need thorough understanding of products and materials. Hence the practice of information-sharing with colleagues and customers strengthens and disperses materials and environmental understanding and 'lifecycle thinking' across the company, as well as in partner and customer organizations. Via this *practice*, the *circular strategy practitioners* at Martela and SVS are directly addressing what Kirchherr et al. (2018) identify as 'cultural barriers' to the transition to the CE. Based on a survey of business and policy practitioners, the two top cultural barriers cited by respondents are precisely 'Hesitant company culture' and 'Lacking consumer interest and awareness'.

4.2.2. Collaboration

4.2.2.1. *Collaboration to Learn and Experiment Circularity*

Collaboration is a core tenet of *circular strategy-as-practice* at Martela, SVS and partner organizations. At household appliance manufacturer BSH Hausgeräte GmbH (BSH), intercompany partnerships form the basis of developing organizational knowledge and know-how around preparing Group brands home appliances for reuse. A key type of partnership is that formed between the company and "preparing for reuse operators"; social enterprises specialized in repairing and refurbishing discarded electronic appliances for resale. BSH initiates and develops such partnerships and pilot collaborations in several European national markets, including Germany, France, Belgium, and Denmark. As the interviewed Expert Circular Economy & Sustainability, BSH Group, explains, the idea for these partnerships arose from investigating an already-existing second-hand market for BSH brand products and realizing that "many companies across Europe were repairing, refurbishing and reselling our products without our contribution as manufacturers."

A key motivation to establish partnerships was to find out what exactly these companies were doing, how preparing for reuse was safeguarding the quality and safety of home appliances and thereby preserving BSH brand value. Specifically, BSH's collaboration with 'preparing for reuse' operators (Figure 7: 7.), allows the Group to: 1) experiment whether preparing for reuse could be made more economical; 2) learn why company products have broken down in the first place and entered the waste stream, and what might be done better design-wise to prevent similar issues in new products; and 3) gather insight

as to customer profiles buying second-hand BSH brand machines. These customers indeed are currently not the Group's target market for new home appliances, but given satisfaction with second-life BSH products, they might develop brand loyalty to BSH.

One such partnership has been established with Sofie, a Liege, Belgium-based social enterprise specialized in collecting, sorting, and refurbishing electronic appliances for reuse, and employing under-employed individuals. Prior to the partnership, Sofie was already preparing BSH brand products for reuse on a small scale, so the Group stepped in to see whether there might be an opportunity to help. Collaboration appeared as a natural fit for BSH, which Belgian warehouse is located close to Sofie's production facility. BSH's familiarization with Sofie's process and trust in the latter motivated the Group to start supplying household appliance scrap pieces from its warehouse, directly to Sofie. This product supply channel configuration was later enlarged to selected retailers, which recovered BSH appliances are also delivered straight to Sofie. Repaired and refurbished items are then sold via Sofie's own sales channels. Partnering with an experienced preparing for reuse operator allows BSH to learn about, and experiment, activities and actor configurations to channel home appliances to a second use-life. Partnerships with organizations holding already established expertise in the repair process and solid sales channels, and helping them with new supply streams as well as Group product knowledge, is a low-risk yet highly insightful way to gauge and gradually enter a new business field.

With operations largely based on generic linear models of production and consumption, partnerships with preparing for reuse operators foment experience and organizational capabilities for developing a partnership-driven preparing for reuse business. This emergent business is supported by new, reverse supply chains, and slowly paves the way towards integrating some preparing for reuse activities and learnings internally. Shared, multi-stakeholder experiences not only yield valuable and tangible learning, but also fashion a network of actors that participate in the enactment and development of a circular economy for household appliances within Europe. In that regard, partnership is both a means and an end of circular economy enactment: it is through collaboration that core questions of the transition from linear to more circular economy models, crystallize.

One such salient question relates to the distribution of responsibility along the chain of actors enacting circular strategy, tangibly reflected in a product's barcode. The BSH informant explains that even though BSH is not responsible for an appliance's repair operation, the EPR principle mandates that ultimate responsibility for a product rest on the manufacturer until the item is recycled, including throughout a potential second use-life. For

BSH products prepared for reuse, responsibility is shared in two serial numbers: one for the Group, another for the preparing for reuse operator. This shared responsibility is made "crystal clear", transparent and thoroughly documented, to deal with possible product use setbacks such as electric shocks or water issues occurring in an appliance's second use-life. These agreements form the cornerstone of the Group's collaborative effort at circular strategy enactment and help ensure that brand products preserve their quality beyond the refurbishment intervention.

4.2.2.2. *Circular Strategy as Collaboration*

Collaboration as both a means and an end of circular economy strategy enactment is two-fold. On one hand, it acts as a vehicle in enabling an organization to experiment and engage with circularity-enhancing activities not yet part of the company's core business and internal processes. At the same time, collaboration amongst a wide range of stakeholders is a constitutive *practice* of *circular strategy praxis*. Circular strategy enactment often *entails* developing a network of stakeholders and supportive infrastructure for the execution of circularity-enhancing business model strategies. Where notions of product ownership and responsibility play a central role, as in the EPR-regulated home appliance sector, collaboration is a means to channel a discarded product to reuse; refashioning and distributing responsibility, ownership, product lifecycle, and consumer trust. With diverse actor responsibilities and capabilities, reconfiguring production systems towards circularity, is about defining and designing roles for participating actors. Provan and Kenis (2008) remark that in network-level interactions and for network effectiveness, the distribution of trust, and whether or not it is reciprocated among network members, is critical.

To dynamically generate and share learnings, one of Elretur's key projects to promote home appliance reuse, is the establishment of a platform for municipalities and their waste companies, and Elretur, to exchange information as to each actor's role, responsibilities, and implications of new standards for reuse. Building dialogue and shared commitment is indeed necessary to enhance concrete collaboration on the ground. For example, as Elretur's interviewee highlights, it is helpful if Recycling Center employees are engaged with and committed to the white goods reuse project, making them more likely to proactively call Recirk whenever a good quality home appliance is dropped off by a citizen. This simple gesture, along, can be sufficient for Recirk to arrive on time on site to collect the appliance and thus get access to a valuable product to prepare for reuse.

In addition, collaboration helps forge a new mindset and organization of the white goods collection and treatment sector. With the sector traditionally built around recycling, knowledge and system mechanisms revolve around this end. However, reuse requires a very different organization that consists in reusing products as *wholes*, over and before ultimately breaking them down into materials such as plastics and metals once at end-of-life. With reuse replacing recycling as the ultimate objective, a new configuration has to be built amongst stakeholders taking part in the system. But for collaboration to be strengthened and motivational for participating actors, targets are important, explains the City of Copenhagen Project Manager. For a municipality, goals can pertain, for instance, to the amount of large household appliances collected, or the number of Recycling Centers participating in WEEE collection for reuse in collaboration with Elretur and refurbishment companies as Recirk. The Municipality of Aalborg Project Leader also underscores the need for concrete, measurable targets and key performance indicators. He observes that for municipalities to take greater political responsibility for product reuse, there has to be a possibility to measure "how the effort is going", even when responsible not for WEEE's treatment, but collection.

Internal collaboration is equally constitutive of organizational circular strategy enactment, as manifested in continuous interaction and information-sharing at Martela. Yet while the central role of collaboration is highlighted by the company's informants, there lie opportunities to further enhance the practice. For example, with no 'permanent' reuse furniture collection sold via Martela Outlet channels, collaboration between company workplace designer, and reuse piece sales, teams, would yield innovative workplace solutions combining new and reuse furniture pieces. At present, new furniture pieces are sold more as overall workspaces, whereas reuse furniture to a greater degree as individual pieces. The challenge, therefore, is to propose workspace solutions that include aesthetically interesting and novel manners of blending new and reuse, while at the same time accommodating the continuously changing availability and uniqueness of individual reuse furniture pieces. Collaboration amongst distinct organizational functions can be both a means and end of Martela's 'Lifecycle' strategy. Since this circular strategy includes both investing in and selling long-lasting workplace solutions as wholes, and preparing a portion of retrieved pieces for reuse, there is an opportunity to blend these two strands through collaboration amongst teams enacting each stream of the overall strategy.

4.2.3. Design for User-Centricity

4.2.3.1. *Ease & Flexibility – or Simple, Very Simple*

A transition to the CE, as ultimately accelerated by new consumer-user habits and attitudes towards reuse products, has to be driven by business model innovation that places design for user-centricity at its core. As SVS's founder highlights, one of the company's main value propositions actually is simplicity – ease and fluidity of the customer experience. Other circular business models, based on digital services in lieu of physical products, for instance music streaming service Spotify, are a source of inspiration for the informant. He observes: "When you get things right, circularity is also very competitive." The key, he analyzes, is to be untied to physical products or resources, as they are "heavy". Ironically, SVS's business is about household appliances, intrinsically heavy products weighing approximately 520 kg per piece and requiring connection to electricity and water. Such business opportunity initially appeared to SVS's founder as a "terrible idea". Yet the company aims at disrupting the household appliance industry through an innovative business model which, despite tackling white goods, offers a simple act of purchasing the product and making upgrades to it along its (second) use-life. To facilitate upgrades, SVS's founder explains that most machines' electric engine, drum, and pump, are similar – the main difference is the control unit known as the machine program, which determines a product's energy label and configuring washing temperatures and durations. This program can, from a technical feasibility angle, be customized for continuously enhanced energy-efficiency.

A move towards a product-as-a-service offer integrating services of care, maintenance and upgrades to machines, is planned by SVS's founder-CEO. Machine care is essential to prolong a piece's lifetime, and thus directly tied to user choices. With respect to appliance care routines at home, there are great regional differences as to frequency of machine maintenance and cleaning by users. According to an APPLiA "2020 Consumer survey on washing habits" (2020) in Europe, on average, 43% of users clean their home appliance at least once every month. In Denmark, the percentage stands at 34%; in Finland, at 19%. Embedding care services and educating users on how to maintain a washing machine and develop this activity into a routine, is an innovative and crucial component of a business model driving circular economy through lifetime extension for household appliances.

However, while developing a CE for household appliances is the raison d'être of SVS's founding, *circularity* might not be the main message communicated to consumers. The choice of words, indeed, influences user perceptions, SVS's founder observes. Indeed,

the company refers to refurbished machines as "remanufactured" instead of "reused". Communications and promotional messaging seek to convey the value of SVS's offer to customers in terms that best resonate with the target audience. While this might mean emphasizing circularity, consumers might in fact attach more value to refurbished machines having a rich history and being remanufactured in Denmark, supporting local jobs. What SVS can charge consumer-users is the perception and value of the delivered user experience. Hence the communications goal, SVS's CEO explains, is not to elaborate on how the company is "fixing a problem", but rather portray the aspirational life and how reuse home appliances not only fit into it, but are consciously chosen by users as part of it.

The user perspective drives the CE, stresses Municipality of Aalborg Project Leader:

What we often forget about sustainability is that actions made by consumers set everything in action.

To reinforce trust in reuse products, price, warranty, speed and convenience of access, are key. These characteristics are the same as those expected of new products. He emphasizes:

All that is done in our linear, very effective economy, has to be done for reuse products, because how consumers act is crucial for real change.

A similar thought is echoed by Elretur's informant, who observes that a major challenge is consumer openness towards reuse – "accepting to look at products sold as reuse" when on a quest for a new washing machine. Thus, Elretur has a role in raising consumer awareness about the availability of reuse home appliances that come with full consumer rights and warranties. Municipalities, too, play a part in fomenting awareness about the possibility of reuse and enhancing the accessibility of Recycling Centers accepting WEEE. Clear and well-designed signage at the municipal Recycling Centers is one such communications endeavor which the City of Copenhagen has focused on, the City's Project Manager mentions.

4.2.3.2. *The Product-as-a-Service at Martela*

As Martela already has an established product-service-system, the challenge, going froward, is adapting to trends and evolving user expectations, needs and preferences as to the locations and modes of work. The organization is moving more and more towards being a "solutions house", rather than "furniture house", explains the Group's Sustainability Manager. The starting point is a space's usage: what work is done in it, what tools an

employee needs to do the work, with what implications for the space. The informant notes that indeed, the technology that individuals use at a given time matters in terms of space and furniture requirements, as exemplified by the A4 paper format necessitating fitting storage compartments, from drawers to printers. Nowadays, we are no longer as tied to specific spaces to do work, which calls for rethinking the significance of space; why we choose a workstation, how we work collaboratively, in meeting rooms or phone cabins, she pursues.

The starting point to Martela's service design process is examining what an employee *actually* does at work – not what one *thinks* he/she does with regards to how and where the work is realized. These insights contribute to an efficient use of limited space, which also holds an environmental dimension as optimized space usage minimizes unused square meters or furniture pieces. There is also a somewhat paradoxical cultural change in the workplace which Martela has to address, describes the Sustainability Manager:

Nowadays we are reachable at all times, but we own less and less physical things like work phones, computers, or cars.

Martela's design challenge is akin to that tackled by SVS: to conceive workplaces that enhance the physical and digital accessibility of spaces, furniture and technology needed for work, yet reduce ownership and reliance on "heavy" physical resources as central artefacts of 'doing one's work'. These questions have become particularly salient throughout 2020 and the Covid-19 pandemic context which has seen a number of companies transition to full or partial remote work, and schools to remote teaching and learning, these shifts mediated by digitalization. Needs regarding spaces for interaction and workstations for independent work, are already rapidly changing (Martela, 2020; 2020g). Design for user-centricity is a core practice to adapt the PSS strategy to megatrends as well as more unexpected events with potentially long-lasting impacts. The *circular strategy practice* of user-centricity encompassed in Martela's WaaS model, is thus a competitive advantage to swiftly adapt to a world in motion.

4.3. Circular Strategy Practitioners

Who are *circular strategy practitioners*? They are individuals who, from farther or closer, contribute actions, decisions, behaviors, and thinking that concretely *do* and *shape* circular strategy at diverse scopes of activity and in their interactions. The individuals interviewed for this research are all *circular strategy practitioners*, who do circular strategy

work in various capacities, roles, functions, and organizational contexts, and draw from previous professional and educational paths. Based on the accounts of this research's informants, four overarching *circular strategy practitioner* personas can be identified, each encompassing specific work roles and responsibilities that can be seen to pertain to at least two or more of the interviewed practitioners – identified roles are not mutually exclusive.

4.3.1. Facilitating Flows: Circulation for Circularity Agents

As circular economy is about facilitating resource flows via particular activity streams, acts of facilitating product, material, and information exchanges are at the core of all of this study informants' work. However, a few informants can be understood to enact work roles and responsibilities that are decisive for product circulation or create foundational processes for the latter. Martela's Recycling Production Manager and Martela Outlet Sales Negotiator are central product *Circulation for Circularity Agents*. These practitioners' daily decision-making, product assessments, information-sharing and collaboration with colleagues from Product Quality to Service Fulfillment, teams, and contact with customers, generate product movement and lifecycle renewal for furniture pieces. These individuals put product lifetime extension into practice through channeling items towards refurbishment where possible, and selling them to new users, while simultaneously coordinating product storage and inventory within tight space and schedules, promptly devising solutions to new needs and challenges. Both interviewees have acquired professional experience at Martela that span several decades and roles in various company functions such as Product Assembly, Service Fulfillment (logistics), and Production.

As I meet with the Martela Outlet Sales Negotiator, he explains that he has just spoken on the phone with a customer and sold 15 work chairs. This customer had 10 chairs that were no longer in need, and so enquired about the possibility to send them for recycling as part of the same delivery operation. This was possible for a small fee, so the discarded 10 chairs would be brought to the Nummela Recycling Production facility, where they would be assessed for repair or recycling. If repairable, these chairs would be sold at the Martela Outlet store to a new customer. The informant adds that he doesn't know what types of chairs are coming, but that there are 10 of them. The described typical customer interaction showcases circular economy *at work*: generating back-and-forth movement for products, whereby furniture pieces are refurbished and sold to a customer, who in turn can provide

obsolete pieces that can be repaired and resold to a new user. This flow orchestration contributes to extend product lifecycles through generating cycles from one user to another.

Around Simple Very Simple, the Elretur, City of Copenhagen, and BSH interviewed practitioners also coordinate home appliance product flows on a more macro, industry-scale. The Expert Circular Economy & Sustainability, BSH Group, for example, has since 2011 coordinated e-waste activities in Europe and worldwide, and over the last years his focus has increasingly shifted upon waste prevention and aiming at product lifetime extension through reuse. In the past seven years, the practitioner's role has consisted in initiating, tracking and scaling projects aimed at preparing for reuse. At BSH, the journey towards a reuse mindset represents a significant cultural change endeavor, as the Group has traditionally directed efforts at selling *new* products. Thus, the informant's role has entailed cultivating the notion of a discarded BSH product being fit for reuse. Along with Sofie, in Belgium, pilot projects set up with preparing for reuse operators in Europe contribute to initiate and strengthen novel product and material flows and reuse opportunities for Group household appliances. The objective to find the right way to achieve the highest possible rate of preparing for reuse.

4.3.2. Sewing the System: Circular Infrastructure Artisans

A second key role identified in the Martela and SVS cases is that of *Circular Infrastructure Artisans*, who fashion processes, structures and institutions that frame circular strategy enactment. Martela's Sustainability Manager has, along her career, been closely involved in developing product quality systems and assessment criteria within a few different companies and industries. She describes the sustainability frameworks used today as a continuation of environmental certifications that emerged throughout the 2000s, which themselves were natural extensions to product quality standards established in the 1990s. Quality and environmental considerations are closely intertwined in that from an environmental standpoint, a key question is what natural resources are used and how to ensure that when something is produced, this output will last for as long as possible. From a quality perspective, in turn, a product's usage is simulated to test for longevity and attention is paid to a product's fitness for a particular usage and timeless design. This specialist is sewing company-wide environmental management systems in accordance with, for example, the ISO 9001 and ISO 14001 standards, Mobelfakta and the Nordic Ecolabel (Martela, 2020b), which guide furniture piece design, materials selection and sourcing, production processes, and recycling and refurbishment, activities. Martela's 'Lifecycle'

strategy is rooted in product quality and durability principles which a circular approach makes ever more relevant and valuable an asset base.

Sewing wider standard and multi-stakeholder collaboration for a reuse market is also enacted by the Municipality of Aalborg Project Leader, the Elretur employee, and the City of Copenhagen Project Manager. This role is about forging connections amongst various stakeholders, developing agreements and new partnerships for the CE. The interviewees from these three organizations are crafting collaboration for the purpose of reuse and sewing commitment and trust into an emerging system. For instance, the Municipality of Aalborg Project Leader, in convening multiple actors around the same table to discuss and build common ground for the new CENELEC EN 50614 standard, has acted in his own words as a "catalyzer" and "bridge-maker" across stakeholders of diverse sectors, responsibilities, and interests. The now established collaboration, he says, has been lacking for 10 years.

The role of a system sewer is also to interpret and navigate a plethora of distinct EU directives and standards, make sense of the state of regulatory infrastructure relating to WEEE and reuse, Extended Producer Responsibility, the legal space to act within, and what is still missing in standards and legislation to support reuse. This role is about building trust within a network, which the Project Leader explains has been particularly important for the relationship between municipalities and Producer Responsibility Organizations – good collaboration a bedrock to both collect WEEE, and channel pieces towards refurbishment. The role of *Circular Infrastructure Artisans* draws characteristics from the *institutional* and *networking and collaboration championing* roles identified by Kokoulina et al. (2019) in relation to industrial symbiosis emergence. As per the authors' typology, individuals enacting the former role facilitate the regulatory, legal and permitting aspects of a transition to a CE-enhancing stakeholder network, while champions of the latter role catalyze cross-industry connections; private and public actor collaboration in the network for WEEE reuse.

Both circular strategy practitioners at Martela, and SVS and partners, are developing organizational and industry *preparedness*. At Martela, it is preparedness for different-size organizations' purchasing behavior to increasingly favor CE-enhancing workplace solutions. Within SVS and partners' network, it is preparedness for legislation in support of reuse. Says Martela's CEO:

> *At a societal level, circular economy is very much spoken about, also by the government, but depending on the size of an organization and especially in the public sector, purchasing behavior is changing rather slowly. Words do not yet quite translate into action. But internally, we have built preparedness and will keep developing it forward.*

The Project Leader at Municipality of Aalborg similarly synthesizes the work accomplished thus far:

We can't just wait for legislation; we need to actively work on new frameworks that are in sync with upcoming legislation, so we are ready.

4.3.3. Sensing the Scene: Circular Strategy Formulators

Sensing the broader business ecosystem and opportunities for circular business model innovation, is a third key *circular strategy practitioner* role enacted by *Circular Strategy Formulators*. At Martela, the company CEO and Sustainability Manager are actively involved in painting the broad strokes of Martela's 'Lifecycle' strategy. From the strategy-as-practice perspective of this research, strategy formulation and execution are not treated as two separate activity entities, but as overlapping and interacting endeavors shaped by all organizational members through their everyday activity *praxis* and *practices*. Nevertheless, while every member of an organization shapes strategy enactment, some individuals engage in activities specifically concerned with articulating and communicating the overall tenets and implementation requirements of a company's strategy, including CE strategy. Martela's CEO and Sustainability Manager specifically engage in the act of strategy formulation through their work of dialogue with industry actors and customers part of the business ecosystem (Antikainen & Valkokari, 2016). They address client demands and questions relating to environmental responsibility, sense trends and drivers in the overall landscape, and integrate insights from this macro sense-making into Martela's strategy.

Martela's CEO explains that the concept of CE has strengthened internally within the past 3 years – the year 2017 was a turning point with the organization of the World Circular Economy Forum in Finland, in which Martela's CEO held a speech. Since then, Martela has been listed on Finnish Innovation Fund Sitra's "The most interesting companies in the circular economy" list; a recognized institution and milestone on the Finnish CE scene. More systematic usage in company and industry discourses – and processes –, of the *lifecycle* concept, has necessitated important internal changes, which the CEO explains have touched much less on furniture pieces, already in a good standing from a circularity perspective, than developing an all-encompassing product-service-system offer.

Integrating CE principles into the organization's day-to-day work has meant redesigning core firm processes to enable furniture piece refurbishment, recycling, and swift transport to new client locations. The question of what happens to furniture pieces once they

reach the end of their useful lives, has become central in the past 3-4 years, pursues Martela's Sustainability Manager. The answer to that question has consolidated into a firm "We take it back", which commitment motivated the acquisition of Recycling Production, previously executed by a recycling partner organization, into an in-house operation a few years back. Martela's CEO describes the past years as marking a transition to a more holistic organization of activities and overarching mindset towards enacting the 'Lifecycle' strategy. Key endeavors in the process have entailed strengthening collaboration across the organization and tying separate activity chains together. This has called for new information systems to facilitate transparent information exchange, as some projects include up to 100 contact points with a customer at distinct phases, notes Martela's CEO. He remarks that recent changes have already positively impacted customers' purchasing behaviors: with some customers, sales agreements specify that only reuse furniture solutions will be ordered.

Overall, Martela's 'Lifecycle' strategy supports the wider company mission of *Better working*. The strategy evolves in time and in response to megatrends such as digitalization and globalization, which has expanded the volume of cheap furniture imports on the national market, the Group CEO observes. Interpreting and implementing CE principles is about balancing wider objectives with product-specific considerations. These balancing acts include reconciling material efficiency with product longevity, which for instance means striving to use the minimum quantity of materials to produce a long-lasting chair, explains Martela's Sustainability Manager. Materials should be of high quality and sustainable, yet at the same time remain within certain cost parameters, given high market competition. In addition, while at an industry-level growing emphasis is placed on product design for disassembly and recycling, the logistics and work costs associated with dismantling and recycling individual product parts do not always justify the environmental gains of these efforts, compared to parts and materials' use for energy production. Martela's Sustainability Manager underscores that while recycling is important, from both CE and cost-effectiveness perspectives, perhaps even more important than single component recyclability is directing efforts and resources at product lifetime extension. In that regard, Martela is challenging an industry in prioritizing waste reduction and product reuse over full recyclability.

Circular strategy practitioners also enact important roles within municipalities. According to the Danish legislative setup, the City of Copenhagen Project Manager reminds that cities are responsible for collecting e-waste from households and smaller companies, and delivering it to Recycling Centers, where Producer Responsibility Organizations "take over the ball". The City plays a pivotal role in the phase bridging the gap between a citizen

and a preparing for reuse operation for a discarded item. As an indirect yet visible and quotidian touchpoint to citizens, municipal circular economy strategies, largely operationalized through the activities of municipally owned waste management companies, can improve accessibility of Recycling Centers, ease of disposing of household appliances so that they might go to reuse, and communications and logistical infrastructure in support of reuse. The informant describes:

A citizen decides where to place his/her items, but the City can facilitate this process.

Another central project for this practitioner is the "Cities Cooperating for Circular Economy" ("FORCE") project between the cities of Copenhagen, Hamburg, Geneva, and Lisbon, unfolding between 2016 and 2020. This EU project engages citizens, businesses, and academia to create partnerships-based circular value chains for specific waste streams. The project is a platform to share learnings and insights amongst various cities, each on their own circular economy journey. In the same vein as businesses and industry actors, engaging with the broader business ecosystem within which they evolve, cities enact circular strategies that link EU legislation and multi-city initiatives and shared learnings, to local experimentations.

At the household appliance sector level, APPLiA, the European home appliance industry trade association, is a prominent actor and authority. Pushing for industry-level change and focus on reuse demands proactive efforts to persuade industry-level decision-makers to embrace a new strategic direction. Balancing diverse and competing environmental considerations and priorities is also at the core of APPLiA's work in defining the broader lines of circular economy strategy for household appliance manufacturers. An APPLiA Position Paper (2018, p.2) indeed states:

There are a variety of ways to drive resource efficiency and manufacture sustainable products that advance the circular economy: targeting at-source material efficiency, (i.e. reducing the quantity of material used in the creation of products), increasing the efficiency of products during use phase, using more sustainable materials, designing for durability and repair as well as for recovery.

The trade association is navigating multiple regulatory and environmental framework requirements, including the Energy Labelling Framework, ecodesign measures, and Product Environmental Footprint Initiative (PEF). A CE angle hence is but one –albeit growingly important – piece within a larger puzzle of environmental frameworks which home appliance industry manufacturers strive to fit together. The paper expresses concern about the home appliance *reuse* prerogative (p.3-4):

Creating products for easy repair may require trade-offs with regard to robust and durable product design (e.g. fused vs. plugged parts) and encouraging consumers to self-repair electronic products may compromise their safety, manufacturers' intellectual property rights and European jobs. […]

Regarding the availability of spare parts, such time-related requirements for provision of spare parts for a future number of years go beyond what can be verified on the product itself at the time of placing on the market. Currently there is no methodology in place which would allow a reliable assessment of the durability of products while being economically feasible and not overly time consuming (It is estimated the durability testing for large household appliances could take more than a year) . […]

The paper takes a stance towards a changing industry system beginning to focus on reuse, thus raising the need to design and test home appliances for longer use times. It is noted that industry processes are not geared towards preparing spare parts in large scale in a time and cost-efficient manner. In that regard, the statements showcase how a transition of large industry players' internal processes towards enabling reuse for more and more products, is most rapidly and effectively initiated through partnerships, as undertaken by BSH. With regards to concerns about the safety of users self-repairing home appliances, manufacturers' intellectual property rights, and European jobs, the findings from this study actually indicate that SVS and partners are enacting circular strategy that innovate professional home appliance care services, devise machine label schemes that uphold producers' intellectual property, and support work in the preparing for reuse market.

The Municipality of Aalborg Project Leader has been in close contact with APPLiA, speaking at the trade association's annual meeting about establishing a European market for extending the lifetime of large household appliances. This case for reuse was initially met with skepticism, specifically about whether there would be customers for reuse white goods. Moreover, manufacturers were concerned about the responsibility to provide customer support services also for refurbished home appliances. The informant reflects that a persuasive argument to the latter concerns was the superiority of a controlled reuse market over the dominant grey market, for when a machine is bought in the latter and an issue occurs, responsibility is *anyway* most often attributed to the manufacturer. With a controlled market, certified companies would have access to WEEE and be able to prepare much of the disposed machines for a second use-life, *with* the support of manufacturers.

The Secretary of APPLiA Denmark, on a phone interview, indeed supports this view: a CE strategy in the household appliance industry enhances product traceability after a first use-life, as currently about 40% of machines are traced post-use. With an important lack of

regulations or government commitments to tackle the grey market, producer firms, in the informant's view, are "first movers" and key drivers of change. They have an economic interest in retrieving products, reusing materials from recovered WEEE, and supporting repair also as a means to keep contact with consumers. At present, the association's goal is to achieve a 5% home appliance reuse rate by 2025. "But producers can't do it alone", he remarks. Industry-level strategy, as strategy at an organizational scale, has to be enacted through partnerships with municipalities, retailers, refurbishment operators, and consumers.

4.3.4. Selling a Second Product Lifetime: Circular Sales Specialists

In everyday contact with consumer-users are the *Circular Sales Specialists*. Persuasion and negotiation are core to interacting with users of reuse. At Martela Outlet, persuasion entails, on one hand, reassuring the customer that a refurbished furniture piece is clean and in good shape, and on the other hand, listening to what the client is in need of, describes the store's Sales Negotiator. While some customers might have prejudices as to the condition of a refurbished item, others shop at the Outlet in a deliberate effort to support the CE. The challenge in a sales speech is to facilitate a customer's decision-making path to a compromise – one that reconciles his/her demands with what is available at the Outlet on that day. Matching furniture units is trickier when working with singular pieces, but the informant observes growing demand for furnishing workspaces using refurbished products.

The sales specialist can choose what to exhibit in the store – what a customer will *see*. Expertise in selling reuse pieces is acquired with experience, and one's own conviction of the quality of refurbished furniture pieces. The informant observes that his own worldview has been shaken in the few years spent at the Outlet. Although he has worked at Martela for a number of years and been familiar with the company's Recycling Production operation, it is visual and tactile everyday contact with reuse pieces that have induced a mindset change:

> *I have come to realize that these products are not done for after their first use-life – in fact, they still have quite a lot in front of them.*

While the CE is an enticing concept in theory, one is most effectively convinced when physically seeing what it produces. To that end, Martela Outlet is a special space wherein as a customer, one's prejudices are tested and mind expanded in seeing products first-hand. At the Outlet, sales specialists have previous experience from Production, and are hence equipped with engrained technical product understanding; a core asset to the role. This

expertise is distinct from that of sales specialists selling *new* products, who have more *sales* experience, the informant notes. Thus, selling refurbished products is gradually becoming a specialization of its own, and one that is growing in importance inside the company. This new role places central focus on delivering aftersales services, actively managing product lifecycles, and supporting product value retention along use cycles (Lacy et al., 2014).

At SVS, the founder-CEO is also creating, iterating, and enacting the role of a sales specialist of product outputs of the CE. The entrepreneur describes that the aim is to demonstrate to customers that repaired machines are as good and even better, than new, since refurbished with deep technical understanding of each machine and solutions to fix issues that are likely to have been at the root of an item's disposal by a first user. This *Circular Sales Specialist* is introducing a new possibility to surface in one's mind when in need of a household appliance: to consider a reuse machine before the brand new. The Municipality of Aalborg Project Leader describes the goal of the reuse market as to make it so mainstream that both new and reuse products would be sold in the same retail stores. Yet for now, the first marketing work phase consists in nudging a consumer-user to start regarding home appliances from a *service and performance* fulfillment, rather than *product*-centered, lens.

In that regard, SVS's website includes videos of the founder-CEO presenting the refurbished appliances for sale. In the videos, the entrepreneur explains the problem of home appliance waste in Denmark, how SVS machines respond to this challenge and offer powerful, personalized and handmade solutions, each part optimized for long-lasting second use-life performance, combined to the ease of purchasing an SVS machine with included delivery service. The communication focus is that of approachability, inviting a prospective buyer to reach out and be advised. A similar messaging edge is visible on the company's Instagram account, which displays sleek, minimalist, washing machine visuals, videos, updates about new machine pieces for sale, and picture captions such as: "If you really have to, buy nothing new." Or:

> *That's why Simple, Very Simple was founded. To allow consumers to experience circular economy and contribute to save the planet while saving for themselves.*

Just like Martela Outlet is a space to closely look at and touch circular economy-enhancing furniture pieces, SVS also wants consumer-users to 'experience' first-hand what circular economy can look like in one's home, or how it can fit into one's bathroom in the form of a remanufactured washing machine. The concept of CE in relation to home appliances is visually simplified, emphasizing the environmental and economic value to consumers and

smoothness of the SVS solution, instead of the technical or infrastructural complexity of the journey of machines' preparation for reuse. SVS is actively designing and iterating communication to convey the CE as ease, value, and "cool".

At the municipal, City of Copenhagen, level, obtaining insight into citizen behavior about reuse is undertaken via surveys, to gauge the share of unused electronics items that consumer-users have in their homes, and reasons for keeping them in close reach. Survey results indicate that the reason, most often, is that people don't know how to get rid of products or are concerned with the difficulty to withdraw personal data from devices. The municipality, thus, has an influential role in building citizen trust in reuse activities. The City of Copenhagen Project Manager's mindset about CE has changed in the past years. She no longer perceives waste as waste, but as a resource that has to be reused in some way:

> *Everyone is becoming more aware of the circular economy and that it matters where you dispose of your waste. If you do it correctly, waste can be recycled. If you do the extra step, it can be reused.*

'Selling reuse' is crucial at both ends of the activity chain linking a first use-life to a second. Municipalities are key protagonists at the beginning of this value chain, facilitating citizen choices about WEEE disposal that are decisive with regards to reuse prospects. At the other end of the chain are entrepreneurs and sales specialists, who via innovative business models, sales messaging and marketing communications, *show* customers how product value is renewed and extended, persuading them to more confidently opt for reuse pieces.

5. DISCUSSION

5.1. Towards Linear Competitiveness, Circular Loops

While a circular business model strategy strives to break from the linear economy paradigm and enact a transformative organization of product and material flows and models of consumption, it was surprising to hear more than one interviewee refer to the efficiency and economies of scale underpinning linear production models. This inherent competitiveness and fitness for industrial scale production was somewhat ironically mentioned as also an objective, and enabler, of circular models of production. For circularity to become 'mainstream' across industries and organizations, scale is a prerequisite. Scale allows investing in technological tools such a 3D-printer for manufacturing electronic

equipment spare parts in quantities apt for large-scale and cost-efficient repair of household appliances. Indeed, SVS's founder-CEO highlights that to be in a position to challenge industry, whereby the company would offer upgrades to repaired household appliances along their second use-life, a large enough size and competitiveness of the repair and refurbishment operation, is essential. Performing technical upgrades to machine programs, which at present the informant notes is not a *technical* roadblock, requires obtaining European Control Approval. This administrative process is costly, and hence demands scale.

On one hand, weaving circularity into a business' operating model implies dealing with an intrinsically heterogeneous product – raw material – portfolio. This unit diversity has to be simplified, as done at SVS with three appliance price categories. Homogenizing the product portfolio is a means to a more uniform treatment of unique items, which in turn supports economies of scale for a refurbishment operation. On the other hand, working towards product circularity through actions that aim at prolonging singular pieces' lifetimes, almost by definition entails treating every item as a unique piece with a customized repair and upgrade solution. Circular strategy enactment thus has paradoxical aims: developing a scalable mode of operation, yet leveraging product insight gained in treating heterogeneous products so as to perform tailored product lifetime extension services onto home appliance or furniture pieces. The Municipality of Aalborg Project Leader describes this dichotomy as using mechanisms fine-tuned in the linear supply chain and applying them to a circular supply chain. Tenets of linear supply chains are product traceability and industrial production, both also key to make an impact using means and aims of the *circular* economy.

An industrial production is necessary not only for technological investments, but also lowering logistics and refurbished home appliance testing costs. Lower per unit repair and remanufacturing costs also allow for more competitive pricing, which in turn is likely to help attract consumer-user interest in reuse pieces. In thar regard, Pheifer (2017) notes that consumers are typically cost-conscious when making purchasing decisions and that higher virgin raw material prices would permit more affordable circular products. Indeed, in both furniture, and household appliance, sectors, circular business model strategy innovators are dealing with the reality of a global market economy and the cheap price of virgin materials that makes linear models of production so competitive and robust. Yet when a raw material used to refurbish furniture or white goods pieces is already *used*, the cost of *acquiring* enough used whole product pieces, parts and materials, thereby establishing a robust and cost-competitive infrastructure of raw material procurement, becomes the chief concern.

Interestingly, already established scale can also be the very hurdle to an organization's internal CE transition. The BSH informant observes that it is the scale of his Group's processes that is the primary challenge to implementing and deepening repair and refurbishment operations in the company's own facilities. This was considered especially difficult from IT and accounting systems perspectives – the informant describes how the company's infrastructure is made to buy raw materials, make something out of them, then sell them. Yet when a product returns "as a whole", it poses a problem. BSH is undertaking a comprehensive change process to overcome these roadblocks, yet for the time being, strong partnerships with preparing for reuse operators, with their own sales channels for refurbished products, are a means to proactively pursue the home appliance reuse project.

At Recirk, treating a vast array of singular household appliance pieces allows for comprehensive technical and product knowledge to accumulate. Says SVS's founder-CEO:

> *We are super-fast at diagnosing the state of the machine and deciding whether to repair it or not. We want to be as efficient as the linear model. Repair needs to be industrialized and scaled; we need to be as smart.*

Knowledge and know-how around repair, resale and reuse, fomented internally or via tight partnerships, create competitive advantage. They are key to the pursuit of operational scalability and taking in new and larger supply streams of WEEE. For a household appliance manufacturer, knowledge-building also focuses on new sales channels and customer segments buying reuse home appliances. When a company already has operational scale, insights about customers, located at the other end of the reuse activity loop, is pivotal to the gradual channeling of operational processes and scale towards product refurbishment. The Municipality of Aalborg Project Leader contemplates:

> *Circular economy does not need be based on rocket science to work sustainably. We have all the tools to produce and reproduce products in our toolbox. We just need to use and apply them towards a circular economy, in the same way as these tools have been applied to the lean production systems of the linear economy.*

5.2. Circular Strategizing: New Professional Roles and Capabilities

The transition of industries and companies towards circular economy thinking and strategizing solicits new work roles and competencies. As Martela's CEO stresses, with a service-oriented business model, service design becomes a core organizational competency; at Martela, trainings and partnerships serve to reinforce and develop service design

capabilities internally. A new perspective on product sales is equally needed – to shift from a product-oriented, to a workplace-oriented, approach. As noted by the Martela Outlet informant, a workplace-orientation is complex with respect to refurbished furniture pieces, which come in varying numbers and designs. Yet the *Circulation for Circularity Agents* at Martela are able to challenge and address insecurities (Joustra et al., 2013) that come with a heterogeneous product stream. Tighter collaboration amongst professionals selling new products most often part of the Workplace as a Service, and those selling refurbished furniture pieces, is needed to offer solutions that integrate both product streams along with the specific product and service insights held by individuals working with each stream. The specialists working with reuse products, specifically, have insights on user expectations and perception of value, understand failure mode and maintenance procedures, and solve aesthetic and structural problems with limited supplied components (De los Rios & Charnley, 2017). These design skills to create products for closed loops (ibid.) are a valuable contribution to piece together even more reuse-driven Workplace as a Service solutions.

The roles of people working at municipal recycling stations is also undergoing change. So far, the Municipality of Aalborg Project Leader describes, Recycling Center professionals have advised citizens on where to place waste of different categories such as plastics or electronics. However, with whole WEEE pieces returned to the Centers, personnel members are increasingly working with *products*, ensuring that they can be accessed by refurbishment operators and facilitating the recovery of specific spare parts based on need and hence in close interaction with preparing for reuse businesses. Thus, the role of Recycling Center professionals is shifting or expanding from providing advice, to a *production* role, wherein employees become specialists in different waste streams such as WEEE. This role transition also changes that of municipalities towards "suppliers of products and spare parts to a common industry", the informant observes. Such new role enhances collaboration with preparing for reuse operators and thus a smoother and prompter access to WEEE pieces.

In Producer Responsibility Organizations, the Elretur informant notes that the organization is developing its communications strategy. This latter is significant to help orient member focus towards reuse, thus contributing to gradually *extend* the principle and enactment of Extended Producer Responsibility towards reuse, not only recycling. The informant notes the important role of reporting to member household appliance manufacturers. Elretur already reports the amounts of WEEE recycled and reused, to member companies, but is looking for ways to present this data also in CO2 equivalents.

More generally, the Producer Responsibility Organization is working on ways for members to more actively use their Elretur membership as part of their environmental profile. With data about the end-of-life paths of household appliances, Elretur can contribute to members' interest in reuse and in the process, motivate setting more concrete goals for reuse.

Developing a market for reuse in Europe is actively underway; a project driven by engaged, visionary and change-maker individuals in diverse organizations such as the *circular strategy practitioners* of this study. Actions and interpretation of a circular mindset in one's day-to-day work, with increased collaboration amongst individuals across functions, establishing new agreements, logistics schemes, and standards, are transitioning the furniture and household appliance sectors towards circularity. The BSH informant remarks that if preparing for reuse increases markedly in Europe, crucial questions emerge as to the current legislative and financing schemes pertaining to EPR. Indeed, who will finance a second round of preparing for reuse should a product be refurbished a first time for a second use-life, and a second time for a third use-life? At present, a PRO as Elretur is mandated to finance the first use of recycling or redirection towards reuse, on behalf of the manufacturer. A third cycle calls for a second product collection round organization and financing, and for consumer-users to embrace *re-reuse*. Circular economy strategizing is currently proactively paving the way for a first post-use cycle, and this work facilitating opportunities for yet further cycles. There is no theoretical end to circularity – from a practice perspective, as showcased by Martela, SVS and partner organizations, it is already an *economy*.

6. CONCLUSION

6.1. Summary of Findings

This research examines circular economy business model strategy implementation using the analytical lens of strategy-as-practice – a study of *circular strategy-as-practice*. Examining the everyday doings of individuals enacting circular strategy at a team, organizational, and network level, shows how the work of establishing circular product, material, and information flows for furniture and household appliances, solicits particular cognitive and enacted processes. Core activities making up circular strategy *praxis* include applying individual judgement and making product decisions based on an assessment of specific factors, homogenizing product heterogeneity, and simplifying task complexity.

The *practices* of dialogue and information-sharing, collaboration, and design for user-centricity, are engaged in and drawn upon by this study's interview participants in support of their situated activities. Furthermore, four circular strategy *practitioner* roles are identified, each bridging two or more levels of circular strategy enactment: individual, team, organizational, network, and institutional. It is also found that while circular models of production and consumption for reuse strive to break from take-make-dispose models, operational scale is similarly necessary to lower production and transportation costs and propose a competitive business model, as in the generic linear economy. Building scale when reuse products are inputs to production activities, relies on developing robust supply chains together with consumer-user trust in reuse. Finally, the two case studies highlight the need and emergence of new professional roles for the CE.

6.2. Theoretical Contribution

This study enlarges the framework of strategy-as-practice to the examination of circular business model strategies. The s-as-p framework is a useful analytical lens to understand strategy enactment both at different scopes, and across two or more levels: from an individual, team, department, organization, to an industry and wider institutional context. This plurality of possible scopes of analysis and interest of the s-a-p lens in how strategy unfolds in the interface of diverse actors with social, economic, cultural, and regulatory institutions, is highly relevant with respect to circular economy strategy. Indeed, circular economy business model strategy manifests within a system bridging organizations, consumers, infrastructures and legislation. The application of a s-a-p perspective to the emergent phenomenon of circular strategizing work further recognizes the important role of a wide range of organizational actors in everyday strategy enactment.

With regards to circular business model innovation specifically, this research forays into the concrete everyday processes, activities and thinking that participate in circular business model enactment within two case studies. The two case organizations can be considered to implement respective business model strategies that contribute to slowing resource loops for office furniture pieces and household appliances. This study has sought to understand *what* activities make up these strategies and how they are interlinked, *why* particular activities are pursued, *how* they materialize, and importantly, *by whom*. The two case studies illustrate how circular strategizing takes place between, and reconciles, sustainability impacts on one hand, and the business ecosystem level on the other. At Martela, this work is shaped via a Workplace as a Service strategy, while at SVS, it is constructed through a value network.

6.3. Practical Implications

From a practical perspective, this study sheds light on the work of circular strategy enactment, which encompasses particular activities, practices, engages specific knowledge and capabilities, and fosters particular professional identities in the individuals doing the work. Because implementing circular business model strategy is an experimental, iterative and *living* process, for novel and not rooted in established or fixed benchmarks or blueprints, circular strategy enactment at different sub-organizational, organizational, industry and institutional levels, is insightful to study as an emergent domain of work. To that end, this study contributes case-driven understanding of what circular strategy practitioners do in the execution of their day-to-day activities and responsibilities; how they think, interpret tasks, encounter challenges, and creatively tackle challenges as well as act on new opportunities.

Listening to the very individuals doing circular strategy work at different organizational and network scopes, this study presents insight into how the development of a reuse-enabling business model and market not only contributes to new product and service offers, and supportive institutional landscapes, but in the process forges new work roles and specializations in participating organizations. Furthermore, while the two case organizations highlight the crucial part of consumer perceptions to support circular economy, their innovative business model strategies, wherein user-centricity is a vessel for circular economy and lifecycle thinking, also nudge consumer mindsets towards a more holistic view of workspaces and the functionality services performed by household appliances. Ultimately, circular strategy enactment via a product-service-system enacted internally, or via a network of multi-actor partnerships, calls for a systems-perspective on an organization: the product portfolio, marketing, and the collaboration across constitutive entities.

6.4. Areas for Further Research

This study raises several areas for further research. One key area is the consumer perspective on circular economy products such as reuse furniture items and home appliances. This perspective would be intriguing to investigate through user interviews of consumers and prospective consumers of circular products, and ethnographic research on consumer behaviour in a store selling reuse products such as the Martela Outlet. With regards to Martela's Workplace as a Service offer, an interesting research angle would be employees in customer organizations: how they experience workplace solutions and see it change their

ways of work or relationship to the office or learning environment. Ethnographic research as a method would also be insightful to actually follow the precise day-by-day path of a household appliance or furniture piece as it makes its way through the network around SVS, or Martela's Workplace as a Service model. A further compelling subject of inquiry is the service aspect of circular strategy revolving around a product-service-system: exploring how product care services are communicated and sold, integrated into the operations of a company traditionally not offering such services, performed at a client site, perceived by consumer-users, and contributing to shape new habits of product lifetime extension.

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APPENDIX

Interview Questions

1. To begin, could you please tell me about your professional background and your current role at ‘organization’?

2. How have this role and your work responsibilities changed over the last few years?

3. What is ‘organization’s’ strategy for circular economy? Why was a circular economy initiative introduced?

4. How does circular economy or lifecycle thinking play a role in your work?

5. In what ways has this circular economy program changed ‘organization’s’ activities and structure? What challenges has this program’s integration and implementation brought about?

6. Who do you work with on a regular basis? How does this collaboration take place?

7. What kinds of skills have you developed in the last few years in relation to your work responsibilities?

8. In what ways is your work challenging?

9. What are you the proudest of?

10. How do you see circular economy developing as part of ‘organization’s’ activities? How has your own perception of circular economy changed over the years?